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How to make
GOOD PICTURES!

Photography



ANDID CAMERA "SHOOTS" GUN BATTLE

OW TO "SUPERFINISH" GLOSSY PRINTS

RE ALL EXPOSURE TABLES CRAZY?


HIGH KEY PORTRAITURE" BY JOHN HUTCHINS, A. R. P. S.

PRIL CAMERA-ALMANAC: "WHAT TO SHOOT THIS MONTH"

★FLASH!

NEW AND REVISED
FLASH NUMBER TABLES

Wollensak means Good Lenses



"Magnolia Blossoms," by Charles J. Ewing, commercial photographer, of Rochester, New York. Aside from his professional work, one of Mr. Ewing's hobbies is adding to his collection of natural photographs with unusual shots of wild life and flowers. Notice the symmetrical arrangement of the blossoms, the sharpness of detail, brilliancy, gradation in this enlargement. Made with a Wollensak Series II f4.5 Velostigmat, enlarged with a Wollensak 6 $\frac{1}{2}$ " focus f6.3 Velokigmat. Mr. Ewing says, "For many years I have used Wollensak lenses in my work. I recommend them highly."

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MINICAM

THE MINIATURE CAMERA MONTHLY

EDITED BY WILL LANE, A. R. P. S.

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Credit Extended

Sirs:

Owing to the spot of bother we have on our hands, I find it next door to impossible to exchange my money for American currency. I am keener than ever now to have my copies of MINICAM, being so near and yet so far, as it were. But as my bankers point out (Westminster Bank Ltd.), the only way clear to me is to ask you to grant me credit until the war is ended, when I promise you that I will settle the account as soon as possible.

E. NORMAN GATRELL.
London, England.

MINICAM is glad to extend Mr. Gatrell subscription credit for the duration—or until exchange restrictions are lifted, and to offer the same to others in the same position.—Ed.

Flopped Picture

Sirs:

How about this—in the March article, "What Makes a Photographer?" it appears to me that the picture at top of page 73 is printed in reverse. If there is any object in this, I didn't quite get it. Or is it just an oversight in setting up for publication?

ROBT. P. JEANES, M. D.

Diagnostician Jeanes is right. The picture was reversed. No oversight, the reversal was designated to make the picture face in to unify the appearance of the layout.—Ed.

MINICAM PHOTOGRAPHY (TITLE REG. U. S. PAT. OFF.). PUBLISHED AT 22 E. 12TH ST., CINCINNATI, O. EDITOR, WILL LANE, A. R. P. S. BUSINESS MANAGER, A. M. MATHIEU. EDITORIAL ASSOCIATES: HENRY CLAY GIPSON, HENRY HOLMES SMITH. CONTRIBUTING EDITORS: JOHN HUTCHINS, A. R. P. S., JACK POWELL, J. GHEISLAIN, LOOTENS, F. R. P. S., ALEXANDER KING, VICTOR H. WASSON. ART DIRECTOR: BOB WOOD. PUBLISHED MONTHLY BY THE AUTOMOBILE DIGEST PUBLISHING CORP. YEARLY SUBSCRIPTION, \$2.00 IN U.S.A. AND POSSESSIONS. CANADA AND COUNTRIES IN PAN-AMERICAN POSTAL UNION, \$2.00. ELSEWHERE, \$2.50. SINGLE COPIES, 10c. EASTERN ADVERTISING OFFICE: EVERETT GELLERT, 42 WEST 48TH STREET, NEW YORK CITY, TELEPHONE VA. 4-5254. MID-WEST ADVERTISING OFFICE: BERNARD A. ROSENTHAL, 333 NORTH MICHIGAN AVE., CHICAGO, ILL. TELEPHONE FRANKLIN 7100. WEST COAST OFFICE: A. ROTHENBERG, 2375 WILSHIRE BLVD., LOS ANGELES, CALIF. TELEPHONE FEDERAL 8847. ENTERED AS SECOND CLASS MATTER AT CINCINNATI, O., MARCH 21, 1938, UNDER THE ACT OF MARCH 3, 1879. PRINTED IN U. S. A.

8 REASONS WHY THE PICTURE WILL BE

Right!



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CARRYING
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(All Leather Carrying Case \$3 Extra)

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ACCURACY—exactly as you see the scene
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into the whole family of Argus Cameras. See them at your dealer's.

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Today's
Outstanding
VALUE
in Twin-lens Reflex Cameras



Takes 12 pictures $2\frac{1}{4} \times 2\frac{1}{4}$ " on 120 or B2 roll film. Compact, simple design, Ikoflex I measures only $3\frac{1}{2} \times 3\frac{3}{4} \times 5\frac{1}{4}$ ". Weighs only 34 oz. Moderately priced.



Ikoflex I

Take an Ikoflex I in hand . . . first note its fine lenses, a Novar Anastigmat f/3.5 taking lens and a Teronar Anastigmat f/3.5 finder lens. Then look into the focusing screen and note the extraordinary brilliance of image. The entire focusing screen is, itself, a plano-convex collecting lens, and this brilliance extends right out to the corners.

Ikoflex I offers every safeguard against error. A red signal shows that you have advanced the film; automatic lock prevents double exposure; diaphragm settings are visible from above.

COLOR ADAPTER

For color work, a new Zeiss Ikon Color Adapter may be used without alteration of camera. Permits 8 pictures 28x40 mm. on No. 828 film.

See it at your dealer's.

Write for Literature.

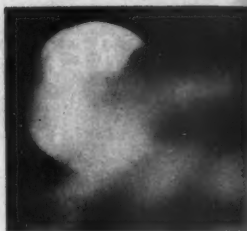
CARL ZEISS, Inc., Dept. C-32-4
485 Fifth Avenue, New York
728 So. Hill St., Los Angeles

Moon?

Sirs:

This looks like a portrait of the moon, with clouds partly obscuring it.

The picture resulted from loading my camera with the shutter open.



H. O. SERKLAND.

St. James, Minnesota.

"Exposure Target"

Sirs:

I surely was surprised to see the article, "An Exposure Meter Target," in your January issue.

I am foreman of our coating room, and believe me, we needed all our 35 years of coating experience to get the grey surface smooth, dull, waterproof, scratchproof, and just the right shade. Our company usually sells paper by the ton, not by the package, and are putting Neutrowe Grey on the market just so camera fans can have a reliable standard to use with their light meters.

LOWE PAPER COMPANY,

F. KABELA,

Coating Room Foreman.

Ridgefield, N. J.

FOR more about Neutrowe Gray Paper, see the advertisement on p. 108.—Ed.



"When a person orders 50 feet of film it's not necessary to take it out of the can and measure it."

Get **ALL**
there is in the
Negative

SOLAR

Enlargers

• Own this distinguished enlarger . . . already a "MUST" in the darkroom of the serious as well as casual worker. Distinguished in appearance . . . superb in performance . . . with every refinement you could hope for. Inspect it at your dealers . . . ask your friends . . . then revel in the personal ownership of America's outstanding enlarger.



• Fitted with SOLAR table-top switch . . . leather touch operation.

• Non-artistic Red Baseboard (Pat. applied for) for cleaner, more brilliant prints.

• Has 3-way switch socket for 3 degrees of light intensity.

• Baseboard measures 30 x 27 inches.

• Fitted with fast 5 in. Wollensak enlarging lens.

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3 1/4 x 4 1/4 in.

7 other models to choose from. Made in U.S.A. PATENTS PENDING.

\$3950
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Manufactured in the U.S.A. by

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WRITE DEPT. M441 for this FREE enlarging treatise . . . a gold mine of information . . . prepared by professionals . . . answers all enlarging questions.



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ENLARGING
TREATISE

Quality
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Simplicity



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- F-R 19 is a delicately balanced print developer.
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- F-R 19 is economical—makes from 80 to 96 ounces of ready-to-use solution.

45c

In this one developer, F-R 19, you will get both finer prints and greater economy. You'll find what real fun developing your own prints can be with the proper developer. Begin today by going to your dealer and getting a bottle of F-R 19. Try it with full confidence—for F-R's money-back guarantee is your assurance of photographic excellence always.

Write for F-R's new, complete catalogue containing much valuable information. Dept. M4, 109 West 64th St., New York City.

Fink



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"Photo Data Clip Sheets"

Sirs:

I heartily agree with reader Cuttriss's idea of having the Clip Sheets and Calculators on separate pages. Pages that can be pasted to notebook paper.

I have never seen such valuable information condensed into such a small space. It beats all the books I have ever read on Photography. If possible, I would like all of the sheets from February, 1940. I would be willing to pay for them if need be. I would like to make a notebook, but I do not want to ruin any of the articles in any of the magazines.

I hope that you will make the past Clip Sheets available to all those who would want them, and in the same vein follow R. W. Cuttriss' idea for future Clips and Calculators.

FRED E. JESCHAWITZ.

Utica, N. Y.

Sirs:

I want to say "Amen!" to the comment of R. W. Cuttriss in your March issue.

The professed interest of the publishers of periodicals to furnish to their readers desired and valuable data amuses me no end when I see such material presented in a manner which prevents its being extracted for filing without mutilating adjacent articles.

The change necessary to correct this fault would seem to involve nothing beyond a consideration for the wishes of those who wish to make profitable use of such tables and charts. The same consideration could well apply to your calculator dials, which would be more useful if they "backed up" something besides the heading or important part of some interesting article.

E. G. KINGSTON.

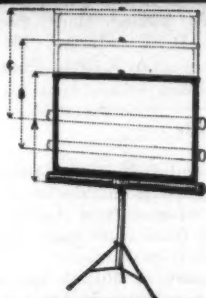
Baltimore, Md.

MINICAM is considering the change, and in the meantime, Photo Data Clip Sheets will be furnished in reprint form, as described in MINICAM advertisement on page 14.



"Sure I heard you, you said 'take this negative and blow it up.'"

If You Choose
YOUR SCREEN
By the **PICTURES**
IT SHOWS

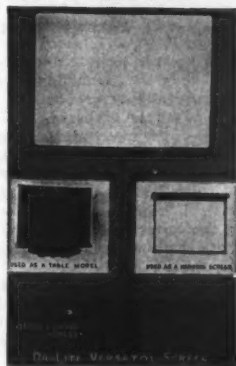


In the **CHALLENGER**, the famous Da-Lite Glass-Beaded fabric is spring-roller mounted in a protective metal case so which a tripod is permanently and pivotally attached. The Challenger can be set up anywhere in 15 seconds. It is the only screen that can be adjusted in height by merely releasing a spring lock and raising the extension rod. 12 sizes from \$12.50* up.

*Prices slightly higher on Pacific Coast

"VERSATOL" IS THE WINNING NAME!

Mr. Merle C. Swanson, 622 Spring St., Jamestown, N. Y. Wins First Prize of \$200.00 in Da-Lite's \$1050.00 Screen Naming Contest. 158 other contestants win cash and valuable merchandise prizes.



If you want a screen that you can use on its own tripod, hang up on the wall, or quickly set up on a desk or table, ask your dealer to show you the Da-Lite Versatol. You will be pleased with its high quality and low cost. Sizes 30"x40", \$7.50*; square size 48"x40", \$10.00*.

YOU WILL CHOOSE THE



(Reg. U. S. Pat. Off.)

GLASS-BEADED SURFACE

At your dealer's make this test! Take in a reel of your own movie film or one or two Kodachrome slides and ask to have them projected—first on a Da-Lite Glass-Beaded Screen and then on any other screen surface. Set the screens up side by side! Compare the picture quality for brilliance, sharpness, accuracy of colors and freedom from sparkle or glare. Check the brilliance from all practical viewing angles!

You will then understand why so many thousands of critical screen buyers have chosen Da-Lite Glass-Beaded Screens—why leading projector manufacturers recommend Da-Lite Beaded Screens—why Chrysler, Deere & Co., Heinz, General Mills, General Motors, International Harvester, Investors Syndicate, Kelvinator, Johnson Wax, Household Finance, Studebaker, and other large users of industrial motion pictures have chosen Da-Lite Beaded Screens to insure perfect projection!

In addition to superior picture quality, Da-Lite Glass-Beaded Screens give you unsurpassed convenience and durability, assuring extra years of service. There are models and sizes to meet every requirement. Write for new illustrated circular! Address Dept. 4M

DA-LITE MODEL B

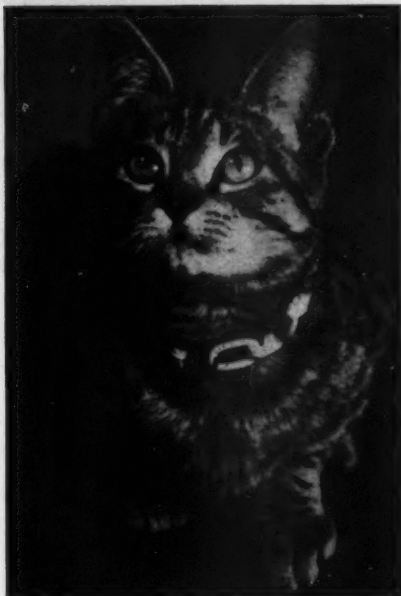
A wall type, hanging screen with Da-Lite Glass-Beaded fabric spring-roller-mounted in a metal case that protects it from dust and bumps. Ideal for game room or projection room. 12 sizes including square sizes from \$7.50* up.



DA-LITE SCREEN COMPANY, Inc.

2721 North Crawford Ave. · Chicago, Ill.

"Animal Life"



Sirs:

I have read almost every page of almost every issue of MINICAM Magazine and I find it very interesting and immensely helpful towards the field of miniature photography. I enjoy animal life photography more than any other kind and I admired very much the picture entitled "Beast of Prey," in MINICAM some time ago. I tried my luck with our house kitten named "Tippie" and I believe I got a fair picture.

DATA:—Camera: Speed Graphic $2\frac{1}{4} \times 3\frac{1}{4}$. Lens: f4.5 Zeiss Compur Shutter. Film: Super Sensitive Pan. Exposure: f.8 at $1/10$ th. Lights: Four No. 1 photo floods in two reflectors. Dev. film: D-76. Paper: Velour Black medium glossy. Dev. paper: D-72. Enlarger: Elwood.

A. R. DELA GARZA.

Box 71, Falfurrias, Tex.

Photographers in Exile

Sirs:

I am writing you on behalf of all professional and amateur photographers in this internment camp. We are all refugees from Austria and Germany, who fled from Nazi oppression to England and were interned there.

Although our loyalty to Britain has been established at the Alien-Tribunals, we were interned as a precautionary measure by the

Outdoors ...
you'll need the MASTER'S
"sharply directional" viewing Angle!

for consistently perfect pictures you'll need WESTON'S proved dependability, too!

You can't capture the detail you want in those distant subjects, especially if heavy foliage or brilliant highlights surround them . . . if you measure "all outdoors." The viewing angle of the exposure meter must be so limited, and of the proper shape, to measure the reflected light from the subject area *only* . . . excluding those surrounding strong highlights or shadows which might adversely affect the exposure.

This is but one of the many reasons which explains the outstanding popularity of the MASTER. Its cone shaped, "sharply-directional" viewing angle (only 30° with the high-light scale) enables you to "spot" and "measure" the subject area only; assuring the correct settings for the detail you want. (Note the difference this makes, too, in ciné or color work.)

Be sure to get all details on the MASTER, and other WESTON models from your dealer today; or, write for literature. Weston Electrical Instrument Corporation, 649 Frelinghuysen Avenue, Newark, New Jersey.

WESTON Exposure Meters

authorities. Sent to Canada, we are awaiting our release, and all hope to emigrate soon.

We have started a Camp University and we photographers have a large discussion group. Our greatest difficulty is the lack of books and technical literature on our subject. The only modern photography magazine we possess is an issue of MINICAM, and we already have exhausted its contents to the last line.

I therefore venture to write to you in the hope that you may perhaps still have old issues of your magazine which are of little use to you now. You can be assured of our sincere gratitude, etc.

MARCELL SEIDLER.

Camp "N," Base Army P. O.,
Ottawa, Canada.

THIRTY copies of back issues of MINICAM have been mailed postpaid to Seidler and campmates.—Ed.

Loading a Film Tank

Every camera fan who has spent hours in a darkroom trying to force a stubborn film into a developing reel, all the time cussing the maker for advertising it as "easy loading," will be interested in the following rules, by which I have solved this problem for myself:

(1) See that the reel is dry.

(2) Insert a piece of medium thick cardboard in track or film groove and run it through until no friction is felt. This insures perfect adjustment of the reel, and polishes the groove.

Prepare the reel this way before each loading, and those troubles are done away with.

E. F. SUDDETH.

Nashville, Tenn.



"No use trying to start the car, dear—I just made a dandy foot switch out of the starter button!"

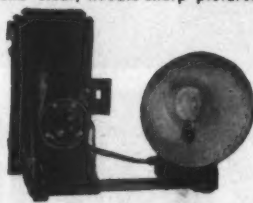
Focus and Flash with KALART!

... get the pictures
you'll always treasure!



The Kalart Lens-Coupled Range Finder (\$34) and the Kalart Master Micromatic Speed Flash (\$14.95)

Focus . . . with Kalart Synchronized (Lens-Coupled) Range Finder, for Speed Graphics and most Film Pack Cameras. Adjustable to your lens. Never any guessing. Focusing is automatic, quick and accurate. The surest aid to "perfect" focus—and clear, needle-sharp pictures!



The Compak Speed Flash \$6.95

Flash . . . with any one of three precision models! The Kalart MASTER Micromatic—"the sweetheart of them all!" \$14.95. The Kalart STANDARD Micromatic . . . the Speed Flash that popularized flash photography. \$11.50. And the newest Kalart Speed Flash . . . the Compak . . . designed for popular-priced cameras. \$6.95. Every Kalart Speed Flash is simple to attach, easy to use. And—doubly important to you—any of these Speed Flash models will consistently return you pictures that are a joy to own!

See these Kalart picture-taking aids. Buy quality. Buy dependability. Write today.

THE KALART COMPANY, Inc.
Dept. M-4, Stamford, Conn.

KALART

SHOOTING THE COVER



SHARP or hazy, which is preferable? Compare the black-and-white close-up, left, with the semi-closeup reproduced in color on the cover.



THE black-and-white was printed from a color transparency that was turned over to reverse the direction of the closeup and make it face in.

SAVING A **BLURRED** COLOR PICTURE

LIFE parodied MINICAM not long ago with a picture of a pretty girl appearing dazed and out-of-focus. LIFE'S idea was far-fetched as no such picture had yet appeared in MINICAM.

But a dizzy dame, or at least a misty-eyed and romantic one being LIFE'S idea of a MINICAM print, we proceeded to see what could be done about it.

On this month's cover, note that the dogwood branches are perfectly sharp. Only the girl's figure is blurred. The blur is due, not to being out of focus, but to deliberate movement. The exposure was made at 1/25 second while the model was in motion. The highlights in the eyes are not sharp pinpoints, but small arcs revealing the exact distance the eyes moved during the split-second shutter exposure.

Normally, a needle-sharp picture is the photographer's goal. Here, however, the sharply outlined blossoms, framing the pretty face, emphasize the blur that helps convey the misty, joyous atmosphere and excitement of a girl lifting her hand to her lips and shouting, "Spring is here!"



TWO professional models were posed in the same setting, in the studio. The model on the cover is Minerva Sawdon. This is Beverly Ann Sperl. The neckline in this pose was deemed inappropriate.

HERE'S THE

SPOT

FOR YOUR
MONEY!



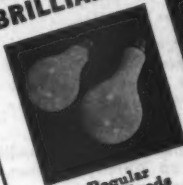
THE MARK OF
FLASH BULB SAFETY
... DEPENDABILITY!

If you're looking for the most for your money in flash bulbs — look for the Wabash Safety Spot! It's the only visible sign of safety you'll find on any flash bulb. And it marks the only flash bulb with the famous all-hydronalium wire element. Synchronized to the split-second, rigidly controlled fluff of super-powered wire gives this patented fluff of super-powered wire gives you the longer and stronger peak-light flash, the sure-fire dependability that makes better flash shooting easy—as well as safe!

There's a Superflash size for every shot, every camera and every purse! See your dealer. Or write Wabash Photolamp Corp., Brooklyn, N. Y.

WABASH SUPERFLASH

THE HEIGHT OF FLOODBULB
BRILLIANCE LIFE!



Regular
Superflash



Reflector
Superflash

Here's how to strike the perfect balance between brilliance and life in the floodbulbs you buy. Just ask your dealer for Superflash. He'll have two sizes—No. 1 at 15c and No. 2 at 30c. You'll find no better floodlamps for all regular snapshot photography, interior snap-shooting or home movie-making.

Those who want to streamline their floodlighting will find a brand-new time and trouble-saver in Reflector Superflash. This handy, super-efficient floodbulb combines a pure silver reflector and highest quality floodbulb in one, single unit. Shoots a powerful flood of light exactly where you want it. Only 85c. list. Swivel socket, also available, 60c list. At your dealer's.

Copy, 1941, Wabash Photolamp Corp.

I had a

NOW A HANDY CANDID CAMERA "SHOT" \$1,000 WORTH OF PICTURES OF A SENSATIONAL GUN BATTLE IN WHICH 2 MEN WERE KILLED AND 3 MORE INJURED



MAX PETER HAAS and his Leica camera. The pictures are copyrighted 1941 by News Syndicate, Inc.

A BLOODY HOLDUP and running gun-battle in the midst of metropolitan Manhattan, on Jan. 14, occurred only a few blocks from New York's famous 32nd Street camera-shopping district where such stores as Willoughbys, Aladdin, Fotoshop, and Penn Camera Co. attract thousands of camera fans.

In a town and area boasting of more professional and amateur photographers per square inch than any city in the world, it is significant that only one photographer was on hand with a loaded camera, and sufficient presence of mind and rash courage to snap the scene of devastation before police ambulances arrived.

He was Max Peter Haas who heard the gunfire and came running, loaded Leica in hand. The scene that met his eye might have been no less than the result of an air raid. Three men lay dead or wounded on the sidewalk.

The affray started when the bandit pair, blood brothers, held up Alfred Klausman, shot him to death in an elevator, and stole a payroll. The two gunmen, Angelo and Joseph Esposito,

fled through a department store. As they emerged, Patrolman Edward Maher took up the chase firing at the fleeing killers.

The running gun battle continued for half a square until Angelo, shot in the leg, dropped his revolver and collapsed on the sidewalk. His brother, Joseph, continued running, crossing the street into a 5 & 10 cent store.

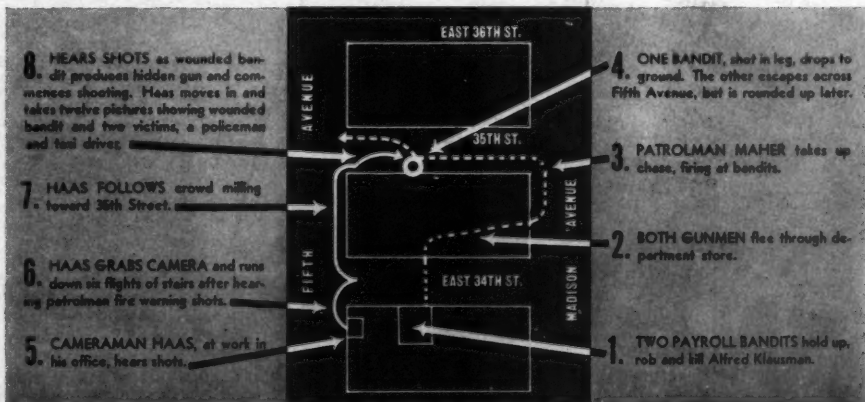
Patrolman Maher ran up to the wounded bandit replaced his service revolver, drew notebook and pencil, and prepared to make out his report. Some say Angelo writhed on the ground, begging for mercy. Suddenly he turned, produced a hidden revolver, and fired on the policeman, who fell mortally wounded.

Cab-driver Leonard Weisberger, a good friend of the policeman, ran up. The bandit, still lying on the sidewalk, shot the cab driver through the throat.

At the sound of the shots, spectators began to flee in terror. A few bold ones, however, closed in on Angelo and were beating him to the ground as Max Haas arrived on the scene.

Photographer Haas raised his Leica to his eye and took twelve shots of the scene, including several pictures of the second bandit when police had him rounded up and brought to the scene.

Within only a few minutes, Haas took the snapshots that made news-photography history. He hardly knew whether he might not be the next victim to stop a bullet, as he moved around snapping exposures of the three bullet-riddled bodies lying on the cold, concrete walk.



"Ringside" Seat

WRITTEN AND ILLUSTRATED BY MAX PETER HAAS



HAAS' first picture (above) showed the wounded killer being disarmed and subdued by irate passers-by. Two victims (below) the slain policeman and wounded cab-driver lie on the ground. Some spectators remain while others, seen in the background, are milling about in fear of further deadly gunfire.





POLICE bring in second bandit (rear), captured in the basement of a 5 & 10 cent store. Wounded taxi driver, who sought to aid slain policemen, Maher, lies on sidewalk in foreground. Closeup of the bandit, Esposito, appears below.



AFTER TAKING this closeup, his 12th exposure, Haas rushed back to his office, and proceeded to develop his roll of film while at the same time phoning the New York Daily News to advise that he would have some pictures to offer them.

TUESDAY was my lucky day. Not only was I lucky enough to escape a hail of bullets from the guns of gangster desperados, but also I succeeded in obtaining one of the most unusual series of news pictures ever taken of a gun battle. Are pictures of gun battles really so hard to get? Well, ask editors or photographic experts, and they will tell you that no real-life gun battle has ever been photographed. Add that it all happened in the shadow of the world's tallest buildings and that sad casualties occurred, and you have the perfect setting for the year's most notable photographic scoop.

It started when I was at work in my office, a photo agency, the European Picture Service. It faces the corner of 34th Street and Fifth Avenue, one of the world's busiest intersections. Day in, day out, I hear the wailing siren from ambulances and the clanging of fire engines



HAAS and his camera have a habit of being around when spot news is in the making. He took a scoop series of pictures when a man falling from a skyscraper window was saved from death by landing on an awning.

whizzing by. Usually the noise of the traffic is enough to drown out anything so trivial as pistol shots.

On Tuesday, January 14th, I was discussing some photographs with Miss Peggy Lane, daughter of the U. S. Minister to Yugoslavia, who is working on an article for MINICAM. Suddenly the sound of shots could be heard. There was a whole series of them.

I looked out of the window. A mass of frightened people were running along Fifth Avenue. I grabbed my camera, which I usually keep loaded, and made the fastest time ever down those six flights to the street. It seems that the shots which I heard were warning shots fired by the police officer on duty at 34th Street and Fifth Avenue. I saw crowds running toward 35th. I arrived at the same moment that a volley of shots were fired.

Never will I forget the scene which I saw on turning the corner upon arrival at 35th Street and Fifth Avenue. Women were screaming hysterically, men were running senselessly, and there were shouts of, "Kill them," "Take their guns away," and "Kill them."

One of the two bandits who had been lying wounded on the sidewalk surrounded by a crowd of people had suddenly whipped out a hidden gun and shot a policeman and a taxi driver. As I came on the scene, the spectators scrambled. This gave me an opportunity to close in and take twelve pictures which in the history of news photography have never been duplicated.

While taking the pictures I was slightly terror stricken, to put it mildly. I had no idea what was going on. There were three people holding guns. Another pistol was lying on the ground. Three motionless figures lay in the street of men killed or wounded in the battle. I moved in a daze, snapping pictures as fast as I could, expecting any minute that someone, accidentally or deliberately, might start shooting at me. I use a minicam, a Leica camera, model G. It has a wide angle lens and a Vidom finder.

While I am now unable to remember any of the details of what I had seen at the scene of the battle or what exposure I used, I was able to recall that I changed lens exposure three times because I was afraid of the condition of the light.

My first picture showed Angelo Espo-sito lying on the ground after he had shot and mortally wounded the policeman who at that moment was being attended by some courageous bystanders. I saw people in the crowd attack the bandit and beat him up while others attended the dying policeman.

After that I moved my camera in all directions. I was rewarded by the arrival of policemen who brought Angelo's partner in crime, his brother, Joseph, to the scene. Having taken twelve pictures, I finally moved away from the scene feeling sick at heart and weak in the knees.

I developed the film in a hurry. The exposures were okay. I phoned The New York Daily News and sold them first reproduction rights. They used ten pictures for their front and back cover, and inside spread of their morning edition of January 15th. They in turn made these pictures available to Associated Press and Acme News Pictures, both of whom telephotoed them all over the country. Life Magazine purchased first magazine rights. Even the New York Journal American, a Hearst paper, purchased a set of pictures from The Daily News. Already, the tiny strip of film with its twelve exposures has earned me more than \$1,000.

Editor & Publisher in a story by Walter E. Schneider had this to say:

"The Haas photos probably are in a class by themselves in New York and other cities as a crime action sequence. Haas hit the high spots of Manhattan melodrama as they have never been hit before. Perhaps the only thing that was missing was the actual shooting of Patrolman Maher by the supposedly dying bandit who for a few moments previously had pleaded for Maher's mercy until the policeman put his pistol into its holster.

(Page 93, please)

GET BACK! DON'T TRIM!

INCLUDE MORE BACKGROUND AREA TO BETTER YOUR PICTURES

BY WILL LANE, A. R. P. S.

SHOW ONE of your prints to an expert and what happens? If he has a scissors or trimming-board handy, he at once proceeds to snip away until half of your pet print is gone. What is more amazing, nine times out of ten, he is right. The trimmed picture proves to be better than the original.

"Next time," is his parting advice, "get closer to your subject and avoid photographing a lot of superfluous surrounding details."

Accordingly, and trustingly, we proceed to take what results in Fig. 1, below. There are two men on a pier looking at the river. Although even the "expert" wouldn't have photographed any closer up, the result is just a meaningless silhouette.

This time, he gets out a pair of L-shaped cardboards and tries framing the picture in various ways, trimming it down to just the heads, and even trimming at an angle to show silhouettes diagonally across the picture.

But no go. He gives up in disgust, "Subject's no good. Forget it. No picture there in the first place."

That's only what he says. Look at Fig. 4. It proves there *was* a picture. Not on the closeup negative, but in the scene.

Let's move the camera back far enough

to include the shadows of the men and the rest of the doorway. In the camera viewfinder, the human figures now become smaller until they are relatively dwarfed in their surroundings. The atmosphere of the waterfront begins to make itself felt. A picture materializes. Fig. 1 is a snapshot of two shadows, but Fig. 4 is a pictorial representation of the waterfront.

● FIG. 2 is a shot of five horsemen on a beach. There is sand in the foreground, surf in the background, and the piebald trotter is nicely placed in the middle of the group.

But it is one of those neither-here-nor-there compromise shots. It fails to be a dramatic closeup of horses in action. Nor is it a pictorial scene of subjects in proper scale and proportion to their surroundings. What to do?

The answer is, "Get back, man. Get back!" Back up enough to get something like Fig. 5, on page 20, and you'll have a spacious sky, a surf-rimmed sea and scale-giving riders. The very clouds, lazy in the middle of the picture, give the feeling of the scene. We can hear the sound of the surf and feel the warmth of the sun on the sand. It's a beautiful and dramatic composition.

FIG. 1

FIG. 2

FIG. 3





SILHOUETTED subjects and pictures with a self-contained frame of black are necessarily long shots. They do not lend themselves to being pictured at close-up or medium distances. A close-up can be made out of a medium shot by enlarging a portion of the negative. But when a

long shot is wanted, it has to be recognized before the picture is taken. Pictorial possibilities often are lost when the urge to get closer keeps us "fudging up" until all possibility for a long shot is lost and we end up with something like Fig. 1 instead of the above.

FIG. 4



SEASCAPE

[20]

FIG. 5

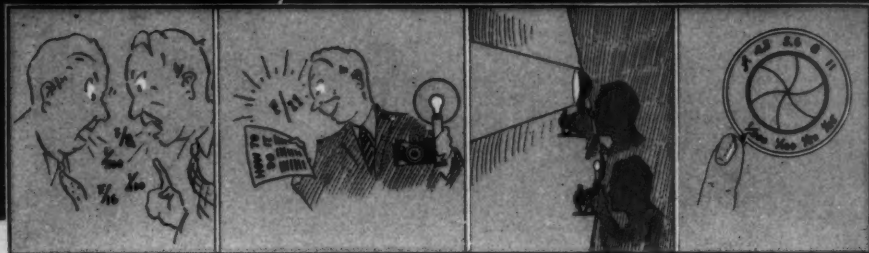
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SEEN OUT OF a second floor window, pedestrians moving over a cobblestone pavement may tempt any shutter finger, especially if the afternoon sun is bright enough to cast dramatic shadows and emphasize the street's texture. Attracted by an interesting lamp post, it is understandable that we might focus on it, wait for passers-by to ambles into the viewfinder, and get a result like Fig. 3.

What we wanted, of course, was the picture above, obtained by shooting from a greater distance. The work of successful photographers shows they are not afraid to get up close for closeups and to back up—way back—for the pictorial long shots. If we take 50 per cent closeups and 50 per cent long shots, the medium shots will take care of themselves.

FIG. 6



No two experts agree on exposure.

Picture-takers want fool-proof instructions.

Reflectors make a big difference.

Shutters are seldom accurately calibrated.

IN A letter asking for information about flash photography, a MINICAM reader demanded, "Are Exposure Tables Crazy?"

He wanted to take some Kodachrome color shots using flash bulbs to get brilliant, sparkling illumination.

The first thing he learned was that in color photography it is important to get exposures exactly right. The second thing—to his dismay—that there are many discrepancies and seeming inconsistencies in the exposure recommendations from various sources.

In one case, one manufacturer recommends four times as much exposure as another. For example, the instruction leaflet packed with Kodachrome roll film advises use of $f/8$ at 6 feet for Kodachrome "A" using one No. 11A Photoflash lamp. This is for open-shut exposure . . . opening the shutter, flashing the lamp, closing the shutter. Eastman ought to know the correct exposure. They make the film and run exposure tests.

But the table printed by the General Electric Company for the same conditions recommends $f/16$. . . a difference of two full stops. G-E ought to know the correct exposure. They make the lamp and run exposure tests.

Close reading of these two data sheets will reveal that Eastman's table is based on the use of "handy" reflectors of the two-for-twenty-cents cardboard kind. The G-E table is based on the use of "good" metal reflectors. A good metal reflector will put about four times as much light on the subject as a cardboard one, when identical lamps are used. There is your difference.

● **MANY OTHER** seeming contradictions and variables exist. All shutters do not give identical exposures when set for the same speed. All synchronizers do not take identically the same part of the flash. There are slight differences between films of the same speed rating, and between individual flash lamps of the same make.

And there are great differences in individuals, too. One chronically overestimates the distance between his subject and his lamp. Another measures it carefully. Another underestimates the distance. Some estimate it correctly indoors, but go way off when estimating distances outdoors, especially at night. Some develop their negatives carefully in fresh solutions. Others are haphazard about development and run developing solutions

ARE EXPOSURE

FOR COLOR AS WELL AS BLACK-AND-WHITE FLASH SHOTS, RESPONSIBLE MANUFACTURERS ISSUE RECOMMENDATIONS DIFFERING AS MUCH AS 400%! WHY?



Black-and-white film has great latitude.

Some like negatives thin ... Some like 'em heavy.

Distance is a fooler ... and important.

Subject matter matters a lot.

nearly to the point of complete exhaustion.

These small differences in equipment, in individual methods, and in subject matter, can add up to big differences in a resulting negative and print.

Dark subject matter requires more exposure than medium or light subject matter ... yet few but the experts consider and allow for this when making a flash picture.

And finally, there is little agreement among photographers as to exactly what is a good negative. Some like 'em thin for projection printing, some like 'em heavy for contact printing ... some like 'em in between.

● **WHAT CAN THE individual** do about it? How can he get good, consistent picture results that are better-than-average? He can reduce all of his personal differences to the least possible number, and he also can run a simple test to provide a basis for exact results.

Such a test is especially valuable in color photography where an inaccurately-calibrated camera shutter is enough to throw transparencies off color.

Make a series of pictures using one camera, synchronizer, reflector, film, and flash bulb. The recommendation of the

photo dealer or manufacturer, can be followed in selecting the combination of equipment best suited to your purpose. Having decided, you will stick with these ... retaining even the same shutter speed.

The test shots should be made under good average conditions ... that is, in a normal-sized living room, with medium colored walls and ceiling. The subject should be a person in medium-colored clothing (subject matter of which pictures are wanted anyway, can be used. Some of the shots will give good prints). The subject should be in the same position in all pictures ... the camera should be in the same place ... the lamp-to-subject distance should remain the same.

● **THE LAMP-TO-SUBJECT** distance may be determined from any exposure table. Pick a distance which calls for a diaphragm opening half-way between wide open and fully stopped down. Then make a series of consecutive exposures ... starting with the smallest stop opening, and making one picture at each opening. With Kodachrome, make these exposures at $\frac{1}{2}$ -stop intervals, such as $f5.6$, $f6.3$, $f8$, etc. For black and white pictures, expose at 2-stop intervals, such as $f4$, $f8$, $f16$, etc. (MORE→)

TABLES CRAZY?

BY DON J. MOHLER, G. E. LAMP EXPERT, WITH AUTHOR'S ILLUSTRATIONS

Now, the lamp-to-subject distance, multiplied by the diaphragm opening, will give you a guide number which can be used to remember exposure and get the same results under similar conditions. Suppose, for example, that your best negative resulted from a stop opening of $f/16$ at 10 feet: 16 times 10 equals 160, your Flash Number.

Dividing this number by any distance in feet will give the correct diaphragm opening for your particular camera, reflector and room conditions. At 20 feet, for example, dividing 160 by 20 gives 8 . . . use $f/8$. Or the number divided by a preselected stop opening gives the correct lamp-to-subject distance. For $f/11$. . . 160 divided by 11 equals 14.5 . . . use a distance of $14\frac{1}{2}$ feet.

This method is essentially the one used to determine the Flash-Number tables which appear elsewhere in this issue.

● **IN BLACK AND WHITE** photography, the latitude of the film is perfectly adequate to take care of slight variations in conditions. In color work, where absolutely perfect exposure is desired, it is easy to adjust for these slight variations.

Most flash pictures are made with the synchronizer and flash bulb reflector fastened right to the camera. This means that the lamp-to-subject distance and the camera-to-subject distance are the same. The lamp-to-subject distance is then often determined by what the picture taker wants to include in the scene. He may have to back up to thirty feet to get it all in. Or, he may come in as close as four feet to get a big image. To allow for this variable, one good procedure is to frame the subject as desired in the view finder and then focus.

When the focus is sharp, take the camera down from the eye and read off the distance on the focusing scale (or if there is no provision for visual focusing on the camera and maximum quality is desired in the results, make a flexible steel tape a part of your camera equipment and measure the distance in feet between the

camera and the subject carefully.) Dividing this determined distance into the guide number will then give the " f " stop opening.

At near distances, the indicated stop opening may be smaller than any available on the camera. Putting a handkerchief over the reflector and opening up two stops more than indicated will result in approximately correct exposure; or, the reflector may be connected to the battery case by means of an extension cord which will allow the lamp to be moved independently of the camera so that a suitable lamp-to-subject distance may be selected regardless of camera-to-subject distance.

On far shots, if the division of the guide number by the lamp-to-subject distance results in an indicated diaphragm opening larger than any available on the camera, the only recourse is to move in to a distance which will give correct exposure with the largest diaphragm opening, use the lamp separately on an extension cord so that it may be moved forward independently of the camera, or select a slower shutter speed which will allow more light from the flash bulb to get through to the film (there is no gain in going below $1/50$ th of a second).

● **WHEN YOU MUST** guess, as every photographer must now and then, your best bet is to make the adjustment in favor of over-exposure rather than under exposure. You will get the picture. But get enough confidence in your calculations to keep you from the chalk-and-soot effect of those who chronically overexpose and overdevelop to play safe. You can do it with your own individual guide number. Then you can disagree with everyone else. You will be an expert as far as your own equipment goes.

In the meantime, for all black and white photography you can use the Minicam Flash Number tables on pages 51 to 53 with full confidence that they are the most accurate and complete Flash Number Tables ever published.



HOW GRACEFULLY can she tie a hair ribbon?



THE PATH traced by her moving hands.

HOW GRACEFUL ARE YOUR MODELS?

P U T T H E M T O T H E " L I G H T " T E S T

ARE your model's motions graceful? One way to find out is by fastening a small flashlight to her wrist and photographing the tell-tale path of light.

The camera is set up on a tripod or other firm support and the lens opened to maximum "f" aperture. Focus on the subject, and set the shutter on time exposure. Turn out all the room lights, and then have the model switch on the flashlight.

Press the shutter for a five to ten-

second exposure while the model goes through one characteristic activity. Do not try to get too much on a single exposure or there will be too many lines in the final picture.

To test walking, flashlights might be tied to the ankle and waist. An automobile manufacturer recently recorded, in this manner, the path of the wheels and body of a car on a bumpy road to show that the body remained almost vibration-less while the wheels bounced over the road.

**D I M E -
S T O R E**
flashlight
taped to
hand draws
the tell-tale
lines of mo-
tion (right).



APRIL IS THE MONTH FOR
SHOWERS, FLOWERS AND PICTURES
BY WYATT BRUMMIT

"RAIN AND WARMER" is a pleasant weather forecast for lensmen who know what to do about it. FIG. 1



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HERE'S April with its special photographic problems and opportunities. The *Cameralmanac*, that incredibly accurate document appearing at the end of this article, forecasts rain for certain days. Daring as this forecast is, we are inclined to give it credence.

Very well, if there's to be rain, what shall we do about it? Shall we seek the shelter of our darkrooms . . . or shall we go boldly forth and make pictorial capital of the precipitation?

Rain itself, en route from cloud to puddle, is frankly not very photogenic. It tends to become a blur of fine streaks, conspicuously lacking in good old black-and-white chiaroscuro. You can photograph it, of course, but when you've got it, *what* have you got? The thing to do is to picture rain in terms of its effect; and it isn't even necessary to moisten a toe to do it, as is proven by the pictures on the next two pages.

ICE is going out. Exposure 1/25, f/12.

FIG. 2
FIG. 3





IF YOU STAY indoors, snug and warm, you needn't risk as much as an open window. Just let a shower sprinkle the pane while a curtain frames it from within. You will note that the texture of the rain-

drops shows up best against the dark background of the distant building. Against the sky, the drops can hardly be seen at all. Exposure 1/25 at f4.5. By Byt from Montmeyer. FIG. 4



AFTER THE RAIN, brick walks create a shiny pattern, wet rails and fences pick up light, and tone values recede with the distance in altogether pleasant fashion. Cobblestone pavements, in case

there are any such in your neighborhood, can be counted on for some fine rainy-night effects. A worn brick pavement or walk also gives this effect. "Late Local" by William Dennin, Chicago. FIG. 8



DREARY LANE, by Richard L. Stites, is one of those night pictures which rain makes possible—and interesting. Every wet stone or mud clod picks up and reflects whatever light there may be, thereby making drabness pictorial. A second prize winner from the Muncie Camera Club's 1940 International Salon, it is a strong, straight-forward piece of composition. DATA: 10 seconds at f11.

FIG. 6

Look for gushing down-spouts. Big and little puddles. The rain barrel. Swollen brooks. People in raincoats or under umbrellas. Busy windshield wipers. Kids wading. Kids sailing toy boats. Bedraggled pups. Dripping hats. Miniature rapids in street gutters. Bespattered stockings on even the nicest ankles.

Carry on with the list, and by no means neglect rainy night pictures, especially in town. For rainy nights offer interesting wet pavements and sidewalks that gleam and glisten as they never do in fair weather. The pictures may be gay, or somber like the one above.

Note that the street light which illuminates the scene does not appear in the picture. The lensman cleverly moved his

camera until the trees shut out the streetlamp from view, shielding the lens from the direct rays.

The drama of the composition comes from the brilliant shiny highlights along the street and in the distance, all surrounded by Stygian blackness. It is a Low Key print, as also is Fig. 1. (For a definition of "Low Key" see illustrations at top of page 36.)

Fig. 2 is lifted out of Low Key scale by the lightness of the ice. Fig. 5 also is almost—but not quite—in Low Key; it falls into the Full-Scale class by dint of the large white area coming from the light behind the waiting room.

"After the Rain" pictures are easier to get than "During the Rain" ones as there is less danger of water dripping onto your lens or ground glass. In any case, an umbrella makes a helpful accessory, shielding your camera from water and from stray light in night scenes. Another valuable accessory is a human slave or accomplice willing to function as porter and umbrella-toter.

But April, even at its worst, is by no means all rain. In some parts of the country there already will be flowers to contend with, or

at least to prepare for. Fig. 3, titled "Humming Bird," is not without its element of humor, in the tiny child hovering over the giant bloom of the Night-Cereus which grows in Hawaii.

This shot looks like the result of such awe-inspiring stalking as we sometimes hear about. You know: Mummy seizes the camera at dawn and follows Junior around for a twelve hour watch with salon-shattering results.

Actually, nothing could be more discouraging and so seldom profitable as following a child around with a camera in the hope that he will do something worth "snapping"—against a background suitable to the occasion.

The surest way to get these "posed-

CAMERALMANAC

FOR APRIL 1941

APRIL HATH 30 DAYS

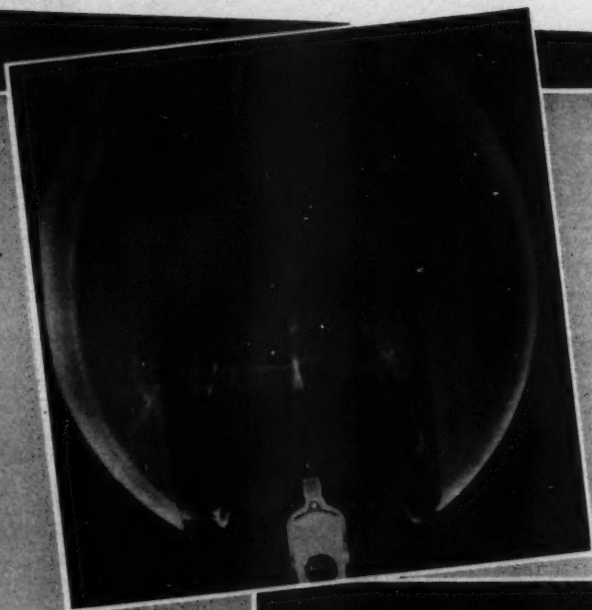
1. All Fools' Day, dedicated to everyone who has ever forgotten to pull that slide.
2. U. S. Mint established, 1792. U. S. photo fans burn up more silver, 1941, than the Mint ever dreamed of, 'way back thar.
3. Pony express begun—St. Joseph to Sacramento—1860. Photographers have been horsing around with high speed stuff ever since.
4. River ice about all gone. Pictorial photographers better look for another subject.
5. A nice rainy Saturday, ideal for darkroom work.
6. Palm Sunday. Drastic temperature change. Jiggers, here comes reticulation.
7. Beautiful clouds. Ever notice how the best days for outdoor shots invariably are the days when you simply can't get away from the shop?
8. Ponce de Leon lands in Florida, 1513, and starts promoting the Fountain of Youth. Early version of fine grain developer.
9. Rain. Always strain tadpoles from rain water before using in developer solutions.
10. Gosh, look at all the flowers! Especially tulips. Snap 'em! Look for soft light; open shade is swell. Mad dogs, Englishmen, and novice flower photographers go out in the mid-day sun.
11. Good Friday.
12. First hot day. Resolve now to quit stowing films and camera in the glove compartment of your car. (Too hot.)
13. Easter. 2,433 photographers lay off wash-off relief and take a whirl at Easter eggs.
14. Pan-American Day celebrated, obviously, with Pan film.
15. Blossoms popping on many fronts. Remember this: Long shots of blossoming trees can be good, and close-ups (especially with cloud-and-sky background) can be downright gorgeous. But beware medium shots, for your blossoms will lack shape or significance. Might as well be popcorn.
16. Nice day. 127 photographers think it would be swell to make a salon shot of barefoot boy fishing, with willow pole, string, bent pin, and can of worms.
17. Major League baseball season cracked open. Sale of open-air cigars skyrockets. Sports photographers happy again.
18. Paul Revere does a Paul Revere, 1775.
19. Probably will be good day for outdoor color shooting. Put a roll of Kodachrome in your camera and go after a color picture like the one on the cover.
20. Photog with fake press pass
Thinks it's fun to trespass.
Cops discover pass is fake,
Drop photog in nearest lake.
21. Hogs ruled off the streets of Chicago, 1843. Photographers ruled out of Lincoln Park, 1930.
22. Arbor Day. The tallest, most stately Lombardy Poplar looks like an apple tree when photographed from close to its foot.
23. Shakespeare born, 1564. Begins quoting Shakespeare, 1565.
24. Maple sugar season ends in Vermont. Season for photographing bums on park benches opens.
25. Double the focal length of the lens you use, and you quadruple the difficulty of getting a steady picture.
26. Gosh, how long the days are getting!
27. Daylight Saving Time begins in lots of places. Many photographers immediately retire to their darkrooms.
28. Don Peculiar Splotz discovers that an "A" filter is no help at all in making Kodachrome scenics.
29. Looks like rain. Those streaks on your film are not lines of driving rain. They're dust scratches.
30. George Washington inaugurated First President, 1789. . . . You must wake and call me early, call me early, Mother dear . . .

unposed" shots is to pick the setting, set up and focus the camera, and then get the child in position by asking him to do something, or better still, offering him the privilege of doing something. In this case the little girl was set down at a point which pretty well assured the desired pose if she

walked straight toward the indicated flowtr. There was no difficulty about self-consciousness because her attention was focused on the thing she was setting out to do and not on having her picture taken, although she was aware that it was being taken.

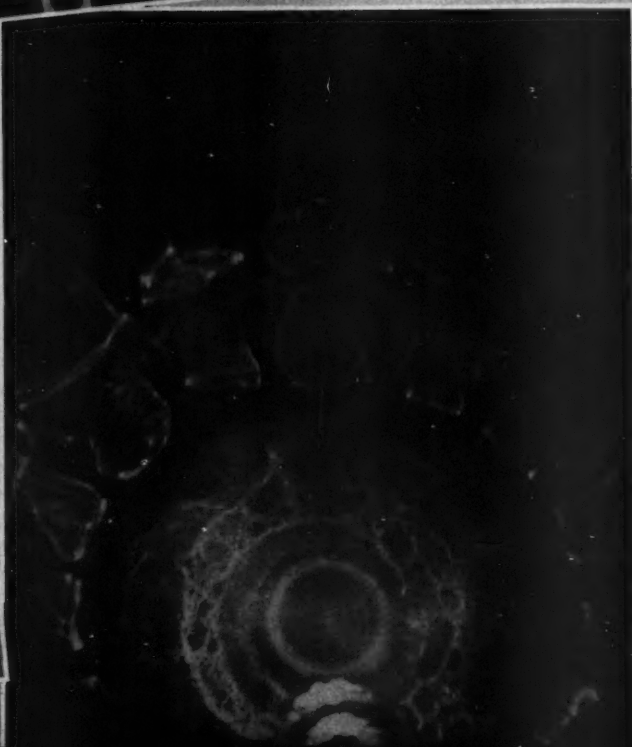
SHADOW PLAY

KITCHEN IMPLEMENTS PRODUCE CATCHY DESIGNS
AND INTERESTING PHOTOGRAPHIC BACKGROUNDS

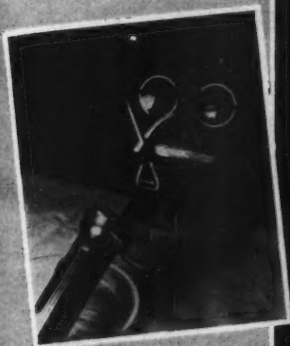


EVERYDAY objects cast shadows that resemble X-ray pictures, cross sections, and even Voodoo masks. These monstrous shadows provide weird and unusual subjects for your camera. All you need is a spotlight and a white wall, or cardboard. A pocket flashlight of the focusing variety makes an excellent spotlight for this type of picture. You can also use a baby spotlight. The shadow cast on the white wall is photographed with a camera. Pocket flashlight exposure: $f/4.5$, 2 sec.

THE arrangement below shows how to set up a glass vase to cast the "X-ray" shadow at right. The distances from object to wall and from light to object control size and shape of pattern.



CARTOON-LIKE effects may also be obtained with the shadows from a pair of dark glasses and a basket handle forming the eyes, eyebrows, and nose. Many other effects can be worked out with objects found in every home. These pictures show a few types. DATA: Super-XX film, $f/4.5$, 2 seconds.



YOU can easily make a photograph of any of these shadows. Merely pin a piece of sensitized paper on the wall and record the shadow directly on it. Develop the paper as a regular print. With baby spotlights, contact paper is fast enough.



High Key

BY JOHN HUTCHINS, A. R. P. S.

HIGH KEY WITHOUT NECROMANCY! NO MORE FANCY DOODLING, ABRADING, NEGATIVE-JUGGLING OR "SHADOWLESS" LIGHTING. EASY DOES IT NOW

"**W**HERE were your lights when you took this picture, Mr. Hutchins?" This is the first question asked whenever I exhibit a High-Key portrait.

Almost every beginner believes that if he knows the exact position of the lights he can reproduce any photograph. He reasons that if he knows "the cause" he will be able to get "the effect." He imagines that the position of the lights is the cause and the picture is the result. This is the wrong way to study High-Key.

We must transfer our attention from *where the lights are to the effect desired*. There are two basic rules for successful High-Key pictures. (1) Know in advance the effect you want. (2) Move the lights until you get that effect.

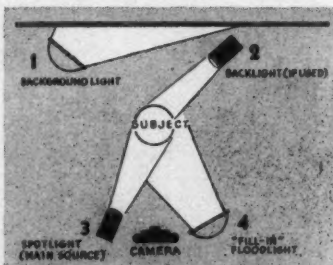
Study these High-Key pictures to recognize the gradations in light and shade. Lighting diagram showing the position of lights should be used only as a rough guide or starting point.

This is especially true of spotlights. For example, you may know

that a spot is exactly ten feet, three inches away from the subject. But, do you know how much it is "opened up" or "spotted down," by focusing? This greatly affects the light intensity.

Another point, do you know just how old the bulb is in the floodlight, which is illustrated, let us say, at five feet, two inches from the subject? A new Mazda produces much more light than an old lamp. This difference might not materially affect an ordinary portrait, but can disastrously influence the results in High Key.

Working from the standpoint of the *effect* of the light on the subject, study the highlights and shadows, and you will allow for differences in light intensity by visually seeking a particular result. If one light is much brighter than the other, it can be balanced merely by pulling it further away. In a study of High Key, put your attention upon the effect of your lights on the subject.



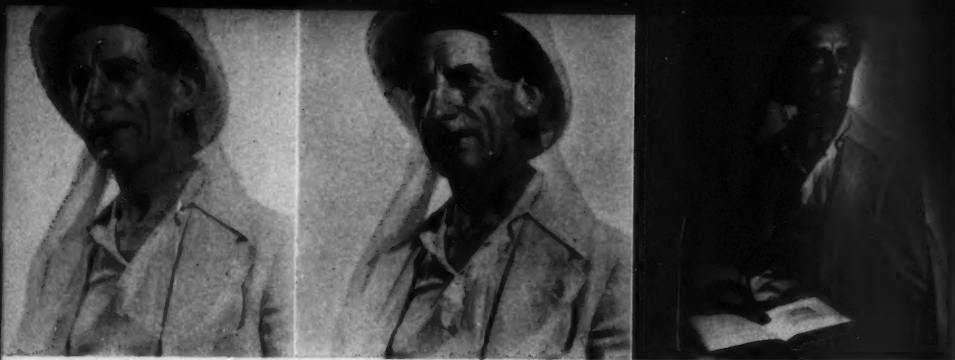
LIGHTS are turned on in the order indicated.

● LIGHTING FOR HIGH-KEY: For front



HIGH KEY photographs are noted for their fragile delicacy. A youthful subject, lace mantilla and slight forward-tilt of the head make a happy combination. High Key effects used to be difficult of

attainment and old-timers resorted to all kinds of faking or retouching. The new Hutchins method is simple and straightforward. Notice that all High-Key prints have a plain white background.



HIGH KEY print utilizes only the brighter portions of the tone scale. Type of subject and effect desired determine the choice of print's key.

FULL-SCALE print uses the entire tone register from white to black including intermediate grey tones. Most pictures are full-scale prints.

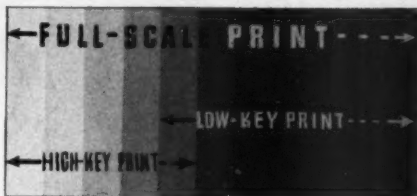
LOW-KEY print utilizes the darker tones. Only small, white highlights are included in low-key.

lighting, I use two lights, a spotlight and a flood light. The spotlight creates the highlights. The flood or "fill in" light lightens the shadows. It doesn't make any material difference whether the spotlight is a hundred watts or five thousand, as long as the secondary light has sufficient wattage to balance and properly lighten the shadows. Working with larger light permits fast exposures which eliminate the possibility of movement. Small lights however get the very same results. The new miniature spots of the Fresnel lens type include the F-R Hi-Spot, Dinky-Inkie, Bantam Super-Spot, Fedco Bantam, Lafayette Hi-Lite and Academy Baby Spot.

A spotlight of less than five hundred watts does not throw enough light for a full-length picture, but easily handles head and three-quarter shots.

● **BACK LIGHTING.** High Key pictures made without any back lighting on the subject lack separation and tend to be flat. (A back light is a spotlight directed on the back of the subject and should not be confused with a background light.) Sometimes this back light scarcely registers in the finished print. Look closely and you will observe its effect. A spotlight is the only practical light for back-lighting. Floodlights throw a wide angle of light and may reflect into the camera lens.

● **BACKGROUND LIGHTING.** In High Key, the most familiar mistake is a muddy, grey background. It should be



STEP-WEDGE or grey scale indicates tone range of various prints. A High Key print limits itself to the grey tones of the scale. In the portrait above, left, note that shadow detail can be seen even under the brim of the hat. A High Key print includes clear-white or all-black areas only in the form of small highlight or shadows in eyes, lips, skin tone, etc. Such highlights pep up the picture.



A SPOTLIGHT, left, furnishes the main illumination for High Key. A floodlight, right, furnishes the "fill-in" illumination. This is the basic setup.



CHOICE of subject is important. The most photogenic types are rather long and lean-faced with slight hollows in the cheeks. The full, well-fed face is considerably less beautiful by modern standards. The subject above is well-chosen and her attractive youthfulness is emphasized through the medium of High Key. For props, off-white shades are easiest to handle. The turban was yellow and the blouse grey, furnishing just enough tone separation from the background.



white. A white-washed wall or a clean, pressed sheet is highly satisfactory. The background is illuminated by two photo-floods.

A grey or yellow background will require more background light in order to "wash it out." Light your background evenly. Check the background lighting carefully just before the exposure. It may save hours of "dodging corners" in the dark room.

● **CHECK YOUR LIGHTS.** Light in units. Turn on the lights one by one checking the result, from the camera position, in the order indicated in the diagram on page 34.

1. Background light. It covers the entire back ground seen in the camera. Its brightness, as measured by an exposure meter, is approximately eight times that of the main light source.

2. Back light. A spotlight from behind, directed on the back of the subject, as in Fig. 1, adds depth and sparkle.

3. The main light source. A spotlight is the main light source or key-light. It is the modeling light. This spot creates the principal high-lights that make skin tones, eyes and lips look fresh and sparkling.

4. The secondary light. The secret of High-Key is the use of this light. Use an unfrosted Mazda. Move it backward or forward, close to the camera axis. As this floodlight moves forward, it lightens or breaks down the shadow areas. How far forward should it go? This depends entirely upon the light intensity of the main light source. Any diagram of light positions can be only a rough guide. The fill light is moved in until the picture looks right, as seen through a blue-glass or viewing finder.

Set up your lights and try to reproduce the effects of the pictures that illustrate this article. After the model is in the correct position, move your main light source only in order to reproduce the highlights and shadow patterns. Then turn on your secondary flood and light up the shadows.

LARGE, DARK areas, such as the hair in the upper illustration, destroy High-Key effect. Illuminating the hair, brings the print into High-Key register.





THE SAUCY TILT of a head and feminine white umbrella are happily rendered in High-Key. The mood and general expression is bright and airy. Low-Key would suggest rain and over-cast skies. Main light was a 500-watt spot. Fill-in was a raw 500-watt unfrosted Mazda in reflector. Background illuminated with two photofloods.

Engravers consider High-Key photographs to be very difficult subjects for magazine reproduction.

The next article in the series by John Hutchins will be "Questions and Answers on High-Key". This will take up figure studies as well as portraits.

Questions on High-Key photography may be addressed to Minicam, 22 E. 12th St., Cincinnati, O.

★ \$ ★ DOLLARS IN NIGHT SPOTS

HOW TO TAKE PHOTOGRAPHS OF ILLUMINATED BUILDINGS AND HOW TO SELL THEM

WRITTEN AND ILLUSTRATED BY DALE VINCENT

EVERY night, thousands of flashing electric signs and illuminated buildings wink on and off, challenging: "There's money in us—get your camera."

The only accessory required for these night shots is a tripod to hold the camera steady for the necessary 10 to 30-second time exposure, and any camera will do.

Certain types of night subjects are sufficiently well illuminated to permit their being photographed just like ordinary day pictures. These are floodlighted buildings in which the lights themselves do not show in the picture. But most artificially lighted buildings are spottily illuminated. There usually is a bright sign and a few lighted windows, the rest remaining in darkness.

This presents a problem in exposure. The brightness of the electric sign may be several hundred times that of the building. If exposure is made for the electric sign, the building will be underexposed and will appear black in print. The picture will show only an electric sign apparently suspended in mid-air. On the other hand, if enough exposure is allowed to properly register the building the electric sign will

be overexposed so much it will be unprintable.

The solution is first to look for subjects that are illuminated with some degree of evenness. That is, buildings that are pretty well lighted, in which the signs are not too much brighter than the buildings themselves.

In Fig. 1, the left hand part of the building is illuminated by floodlights and reproduces with good detail. In Fig. 2, no such flood illumination is present. The result is just a picture of the electric sign and not much of the building can be seen. However, the small electric lamps strung across the front above the cars give just enough illumination to provide a suggestion of the building so that the result is not a bad shot.

Fig. 3 is better illuminated from the photographic point of view. The lights strung under the eaves, and the whiteness of the building combine to outline the scene pretty well. The wet pavement in the foreground catches a few highlights, too.

Fig. 4 is a relatively easy subject inas-

NIGHT AND LIGHT glamorize today's business buildings. Good pictures of these places appeal to pride of ownership and sell well. **FIG. 1**

EVEN A 98-cent box camera can photograph lighted buildings at night. Use of a slow lens only means that a longer time exposure is necessary. **FIG. 2**





OVEREXPOSE and underdevelop scenes like this to bring out dimly lighted areas. Develop the negative for one third to one half normal time. DATA: Eastman Tri-X Panchromatic film, $f/8$, 50 seconds. FIG. 3

much as there are no illuminated signs in the scene at all. The chief illumination comes from the ceiling lights, and these can be seen to be burned up to some extent.

Exposure is a compromise between cor-

rect exposure for the electric light, and correct exposure for the building. About ten seconds at $f/8$ on fast film such as Eastman Super XX or Agfa Superpan Press is about right for many buildings.

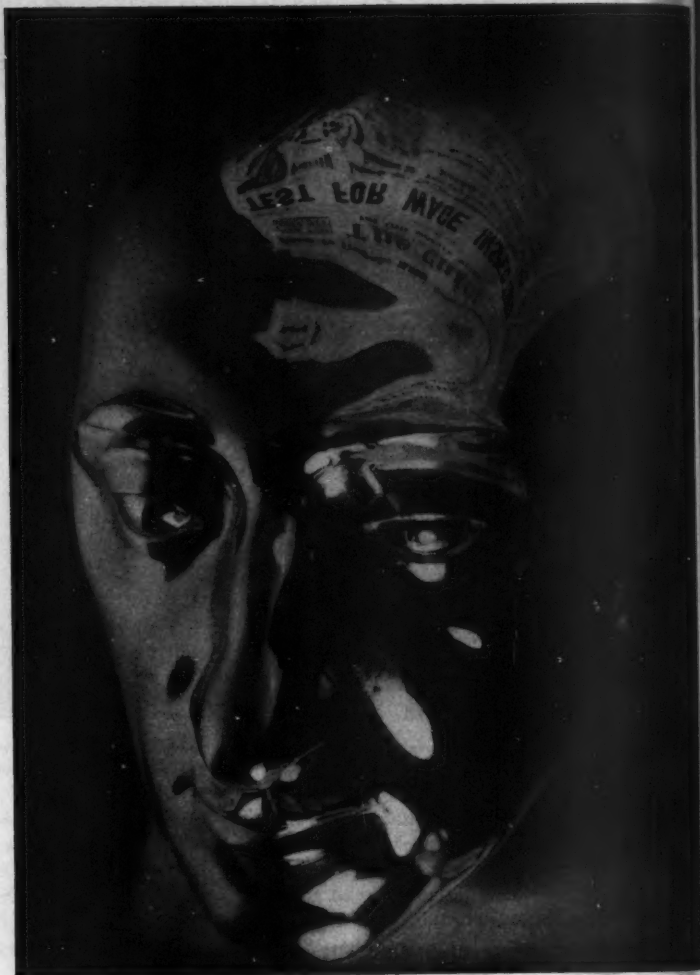
(Page 95, please)

WHEN FLOODLIGHTS illuminate the buildings, the light from electric signs is balanced, and normal exposure and development is used. DATA: Tri-X Panchromatic film, $f/8$, 10 seconds. FIG. 4

MANY A LOCATION looks its best when night blots out unsightly surroundings. Fluorescent and dim floodlighting are combined here. DATA: Tri-X Pan film, $f/8$, 13 seconds. FIG. 5



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PROPAGANDA! Modern man is a hollow skull with a late edition floating on top of his brain! No wonder this exhibit, who "runs as he reads" is susceptible to every propaganda item that hits his hollow mind. He can truly say that all he knows is, "what he reads in

the newspapers." His entire mental diet is undigested headlines. This photograph of a chromium-plated plaster head by Kurt Severin, is as good as a 1,000-word editorial; in fact, it is a pictorial editorial. More and more editors are beginning to use such pictures.

ODDITIES BEFORE THE CAMERA pays \$5 and up for prints that illustrate slightly unusual, tricky or novel pictorial effects. Submit prints with brief description of each to "Oddities Dept., Minicam Magazine, 22 E. 12th St., Cincinnati, O." In the picture it should not be entirely apparent, until reading the description, just how the effect was obtained.

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HALF A HALFBACK (the ball-carrier third from the left) is pictured actually making a score in this shot of a night football game. How it happened is as unusual as the picture. Henry Lefebvre's synchronizer failed to flash on this shot, but a cameraman stand on the left shot at the same split-second, recording the picture for both. Rest of player's body is concealed in shadow.



IF "CURIOSITY KILLED the cat" this feline "Kit from Siam" would be a dead pigeon. The cat's pose and expression were exaggerated by elongating the image during enlargement. By Harold Blackstone. DATA: Korelle Reflex, Kodak Panatomic-X film, 1/25 second, f3.5.

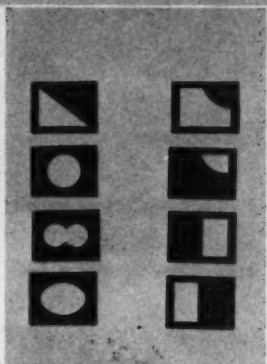


WOOD GRAIN, Frost on a window pane and water over the spillway of a dam, what do these have in common? The answer is "Pattern," as illustrated by E. J. Eisenmeier. For the photographic answer to this "What is It? riddle, see page 107.

THE CAMERA



JUST turn the camera upside down. That's all you need to do to film reverse action. FIG. 1



MATTES of various shapes, placed on lens, produce effects shown on next page. FIG. 2



MATTE box, which resembles a lens shade, holds mattes in Fig. 2 before camera lens. FIG. 3

SIMPLE CINE EFFECTS

YOU CAN DO SPECIAL EFFECTS WITH REVERSE MOTION, MATTE SHOTS, DOUBLE EXPOSURES AND STOP MOTION

IN YOUR FIRST HOME MOVING PICTURES, perhaps straight simple shots of friends and family sufficed. The mere fact that these pictures moved made them interesting to you. Later however, when that novelty wears off, you begin to seek ways of injecting variety into the films. Then cine effects become important.

Trick shots add interest and smoothness to theatrical motion pictures as well as liven up a family movie. In either case they remain basic elements of cinematography. Because of the efficiency of modern amateur cine equipment, many professional effects can be secured with the simplest of equipment and accessories.

• THE FOUR BASIC effects from which the majority of effects stem are: (1) Reverse motion, (2) matte shots, (3)

double exposure, and (4) stop motion. More complicated tricks are frequently made with combinations of these basic effects.

Reverse motion is achieved simply by filming the scene with the camera inverted. Fig. 1 shows one method of holding the inverted camera for reverse effects. The exact position for holding the camera depends on its shape and the position of the release button. Brackets are made for holding an inverted camera on a tripod.

When the finished film is received, the inverted shot is cut out and spliced back right side up. The end of the action is now at the beginning, and the entire action of the scene is backwards. In 8mm., the film is spliced back to back, because 8mm. film has only one row of perforations. In such cases the action is also reversed right for left, and the projector

ON THE SCREEN the keyhole matte, shown being inserted into the matte box in Fig. 3, gives this effect. Note the diffused edges. The amount of diffusion depends on the distance between matte and lens and the lens aperture used. Smaller stops give less diffusion. **FIG. 4**



THE BINOCULAR matte produces this effect on the screen. The matte itself is shown in Fig. 2, second from bottom in the left-hand row. This is a popular method of framing closeups in outdoor sports films such as horses racing, football games, etc. **FIG. 5**



A DOUBLE-EXPOSED circle matte shot emphasizes part of a scene yet permits all of it to show. This effect is similar to the "spotlighting" of a subject in still photography, a device widely used by commercial photographers. **FIG. 6**



THE MATCHED PAIR of "dream" mattes shown in Fig. 2 (top and second from top in right-hand row) were used to produce this double-exposure effect. The hero is filmed seated in his chair dreaming. The film is rewound and the girl is photographed in upper corner. **FIG. 7**



has to be refocused when this scene appears.

In home movies, scenes showing action in reverse are good for many a laugh; but the same method makes it easy to film otherwise difficult shots. A man jumping backward off a wall appears in reverse to

VERTICAL SPLIT-SCREEN mattes produce "twin" and "double" effects, showing the hero in earnest conversation with himself. The mattes used to create above effect are seen in Fig. 2, right-hand row, two bottom mattes. **FIG. 8**



SINGLE-FRAME button exposes the film for animated effects. Lightly tapping the release button of some cameras not so equipped, also, releases a single frame at a time. **FIG. 9**



TEN-CENT TOYS make good subjects for animated movies. Here a toy mouse creeps up to cheese-baited trap and sniffs at the bait. **FIG. 10**

have made a prodigious leap. If your subject gets up from in front of an automobile and walks backward out of the scene while the car backs away from him, the reverse shot makes him appear to have fallen in front of a moving auto. At the end of the scene splice in a closeup of the driver's face, or of locked wheels skidding, taken at a different time. This heightens the effect.

● **MATTES, OR MASKS**, are used to frame the scene in a shape different from the standard size rectangle. Fig. 2 illustrates a few typical mattes. A great many other shapes can also be used, the choice depending on the effect desired. Those in the left hand row in Fig. 2 are, beginning at the top: Diagonal Split Screen (the same matte is inverted to expose the other half); Circle or telescope matte; Binocular or Opera Glass effect; and the Oval. On the right are two matched pairs for double-exposure effects. The top two are called the "Vision" effect or "Dream" matte; the bottom pair are "split screen" mattes.

These mattes are used in front of the lens in a matte box (Fig. 3), although some cameras have provision for placing them inside, in front of the film itself.

The matte box shown in Fig. 3, is mounted on the tripod with the camera. The matte box is placed far enough in front of the lens for the outline of the matte to record on the film. The exact distance depends on the focal length of the lens, and the aperture at which the lens diaphragm is set. Shoot tests and keep a record of the results if you use a home-made matte box. Fig. 3 also shows a "keyhole" matte being inserted in the matte box. Fig. 4 shows the effect of the "keyhole" matte on the screen. Note that the edges are somewhat diffused, due to the closeness of the matte to the lens.

● Fig. 5 shows the "binocular" effect. Strictly speaking the effect is not true to life, since if a pair of binoculars is prop-

erly made and adjusted, only *one* circle is seen, but we are used to seeing the double circles in films representing a scene through binoculars, and this is therefore the conventional shape.

If you can rewind the film in the camera for a double exposure, as explained in last month's article (MINICAM, March, page 44) part of the screen can be matted off for supplementary action, which is photographed on the same film in a second trip through the camera. If the camera has an accurate footage meter, note the footage where the scene began and ended, run the roll to the end with the *lens covered*, rewind the film in the dark and load the camera. With the *lens still covered*, run the film to the point where the scene began, and then remove lens cap and make the second exposure.

On cameras having built-in rewind devices, the above procedure is unnecessary. Local mechanics can frequently fit re-winding mechanisms to cameras that are not so equipped.

- **STOP MOTION** is used to make animated cartoons. You don't have to be able to draw, however, to make simple animated films. Jointed dolls, or simple dime store toys come to life on the screen by this method. Move the object slightly, shoot a single frame of film, move the object further, expose another frame, and so on until the action is completed. A little practice demonstrates how much to move the doll for each frame to get the desired speed of action.

If the camera is not equipped with a single frame release, tapping the exposure button lightly usually exposes a single frame of film. If the camera has several speeds, set it for the slowest. This makes it more certain that only one frame is exposed at each tap.

- With care, several effects can be combined: matted shots and stop motion, for example, or double exposure with stop motion. The second pair is used to combine live action with stop motion. The

possibilities of this combination are limited only by your skill and imagination.

Fig. 6 is a combination of a matte with double exposure. The scene is shot first without the matte, with about $\frac{1}{3}$ normal exposure. The film is then rewound, the matte placed in front of the lens, and the scene shot a second time, with $\frac{2}{3}$ normal exposure. Thus the section through the opening gets full exposure, while the matted part receives only $\frac{1}{3}$ exposure and is darker but still visible, unlike the effect with the matte alone. Neither the camera nor any object in the scene may move the tiniest fraction or the effect will be spoiled.

A "ghost" may be made the same way, without any matte. The background is first shot for sufficient footage with $\frac{1}{3}$ normal exposure. The film is rewound without moving the camera, and the scene is shot again, this time with the actor in it, at $\frac{2}{3}$ normal exposure. Thus the background, $\frac{1}{3}$ its normal density, will be seen *through* the body of the actor, while elsewhere it has received full exposure. The actor, having received only $\frac{2}{3}$ exposure, will be transparent, or ghostlike.

- Fig. 7 shows a double exposed dream effect made with the two matched mattes, top, right, Fig. 2. The first matte is used in front of the camera to mask off the upper right corner of the scene while the man in the chair is photographed. The film is then rewound, with the lens covered, and the second matte placed in front of the camera. This covers the part of the scene just shot and permits photographing the dream in the space left blank by the first matte. Corresponding mattes should be made for *the finder* to aid in lining up such shots. The camera may be moved between the two parts of such a shot, since the backgrounds need not necessarily match . . . in fact the dream may frequently be a place, a building, or even a new car!

Fig. 8, a matte shot, is the familiar,
(Page 98, please)

★ TORTURE ON

WRITTEN AND ILLUSTRATED
BY WILLIAM E. HENNING

Dear Editor:

I'm in trouble. Something is screwy and, unless things straighten out pronto, it may be me.

This is the situation. I'm a youngish man, with a job and no criminal record. I pay my bills, use the right spoon for soup, and treat my mother nicely. I'm a good sort of guy—but people don't seem to like me anymore. Even Gertrude is getting kinda cool and distant. If you knew Gertie, you'd know what that means. She can be colder and farther than an Alaskan mountain. And I don't like for her to be that way. I want her to like me, lots. I want everybody to like me.

What can I do?

Yours in anguish,

CLAUDE

P.S. I'm a movie maker, too.

Dear Claude:

Perhaps the clue is in your P.S. Please expand it a bit.

Yours,

THE EDITOR

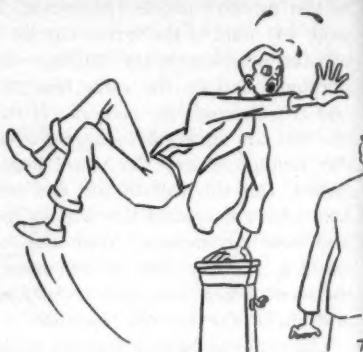
P.S. Regards to Gertrude.

Dear Editor:

I'll convey your regards—if I ever see Gertrude again . . . The P.S. said I make movies. I don't mind talking about Gertie, but I hope you're not going to get personal about my movies.

I'm pretty hot as a movie maker, I admit. I've a Super Cinny 16 camera, with a 25 mm. *f* something lens, three accessory lenses, four speeds, air-cooled view finder, and a slightly rusty tripod socket. Last summer I took 2000 feet just on my vacation. Can you beat that?

You should see my projector. It's the best there is and I can always thread it right in three tries. I use the wall for a screen. Maybe it is a little confusing—there's just a little pattern in the wall paper, but it's not bad. I never have any trouble figuring things out, myself.



Some ran, some jumped the furniture.



"THE youngsters made shadow-pictures on the wall."



"The takeup reel wasn't working."

THE SCREEN

A HUMOROUS APPROACH TO HOME PROJECTION
—HOW TO MAKE ENEMIES AND ALIENATE FRIENDS



"UNCLE ELMER got sore just because his bunion was bopped twice in the same place."



IT was some time before I could rescue it and resume the show.



"THOSE who weren't asleep were sneaking out even though I was telling them all kinds of interesting details about my pictures."

Now that I think of it, it was during my last big evening of showing movies that my troubles began. Once, when I turned up the lights between reels, I discovered that three of my guests were missing. I paid little attention to it, at the time, knowing that there are always a few in any crowd who can't appreciate the *Finer Things*. But, as I look back, it was that same night that Gertrude started being nice to Bertram. Bertram's hobby is stamp collecting.

Have I given you any help?

Hopefully,
Claude

Dear Claude:

We're afraid so. But we still need more details. For example, exactly what was your program, back on that night when Gertie started stimulating Bertram?

The Ed.

Dear Editor:

Not that I do not consider your question impertinent, (Gertie and Bertram went to the Philatelists' Ball last night), but here's what happened:

I asked a dozen of the folks in to see my vacation movies. I didn't bother to set things up before the gang arrived. We're very informal at our house. It was lots of fun dragging furniture around, although Uncle Elmer did get a bit miffed the second time the same chair bounced across his bunion.

When I turned on the projection light, it was a good, bright beam—very bright indeed, considering the *phuff* that had collected in the film gate. I blew that out, while a couple of the kids amused themselves making shadow pictures on the "screen." . . . I threaded the film and got all set to go.

"Folks," I said, in a loud, clear voice,

these are the movies I made on my vacation. They're not titled or anything. After all, Hollywood outgrew titles back in 1928 (paused for a laugh, which was a mistake). So, without further ado, here we go. Joe, will you kill that light please . . . No, the second button . . . No, not that one, the other . . . Okay, that's it."

The room was dark and my crowd quietly receptive. I started the projector. On the screen there was a snowstorm scene made from a second story window of the house.

"Hey!" shouted somebody, "what kind of vacation is this?"

"Oh, that," says I. "It's just a bit that was left in the camera from last March. Didn't bother to take it out. Besides, contrast always helps, I think . . . Oh yes, here we are. Here's the vacation part."

"What is it?" asked a voice.

I had to stop and think a moment. It was a shot made through the windshield of the car. Things jiggled quite a lot, and I couldn't quite make out where it had been made.

"Oh," I says, offhand, "this is just a bit of transitional material. Gets us into the mood of the picture, you know."

That might have been O.K. if the next scene hadn't been an experimental shot I'd made and forgotten about—an upside-down shot of Engine Company No. 2 answering an alarm. It'll be good when I reverse it and splice it in properly.

"Haha," said I cheerfully, "tricks in all trades you know."

The next shot fortunately *was* a vacation picture. It showed some boys paddling a canoe.

"Look!" shouted somebody, "isn't it amazing! The pictures actually seem to move! Wonderful, Claude."

"That's nothing," I replied modestly. "You haven't seen anything yet."

And, to bear me out, the next scene was a pictorial shot, made from beneath a pier at Lake Doughnut. Naturally, to get the whole scene in, I had to pan quite a lot and kind of fast, too. The pier posts made a very pretty pattern as they vibrated across the screen.

"Hey, quit!" somebody yelled, "That hurts."

I ignored that. Some people are naturally inconsiderate.

"Now," I answered cheerfully, "here comes the big stuff—Niagara Falls!"

"How romantic!" I heard Gertrude say.

Well, Sir, it really was romantic. There were the falls, plain as day, only the pictures got pretty blurry in a moment.

"That's mist," I explained.

"It never would be," said somebody, a remark I couldn't understand.

"And the 'Maid of the Mist' is down there," I explained. "Only you couldn't see it that day."

With that, we reached the end of the reel. When I went to turn on the lights, my feet were tangled in film. The take-up reel wasn't working; anyway, that's the way I explained it. A couple of the boys started playing "snake charmer" with the 400 feet of film, so it was some time before I could rescue it and resume the show.

The second reel was all threaded and everything before I realized that it hadn't been properly rewound. Some of the gang pretended they liked it reversed but after all, I have my pride. I stopped the show, turned on the lights and rewound the reel of film.

"Accidents will happen," says I, laughingly, "in the best regulated families."

"But not hard enough," said somebody.

Well, maybe you've heard enough, now. I showed 'em five 400 foot reels, just as they came from the camera. I'm a purist about things like that. If I spend film for a shot, my crowd can spend the time necessary to see it. By 11:30 p.m. my crowd was pretty quiet. Those who weren't asleep were sneaking out, even though I was telling them all sorts of interesting details about my pictures. At last, just to cheer them up, I said, "Now, how about some of my *last year's* vacation shots?"

It was the strangest thing. They sat as though spellbound, until someone said "I got double-feature paralysis," and fell off his chair.

That broke the spell. People got up

(Page 97, please)

HOW TO USE

"Flash Number" TABLES

THE *Flash Number* system, for determining exposure in flash photography, has become universally adopted since MINICAM published its exclusive *Flash Number* tables last year. On the following pages, the MINICAM tables are now revised and brought up to date.

Some published tables are inexact in that flash numbers are calculated without regard to the characteristic curve of each lamp. Such tables assume that a flash shot at 1/100 of a second, for example, will provide twice as much exposure as at 1/200 of a second. This obviously is untrue when using a lamp which emits perhaps 80 percent of its illumination in 1/200 of a second. The MINICAM tables are calculated accurately from the characteristic curves of the flash lamps.

● **HOW TO USE** the tables: (1) look up the *Flash Number*, on the next page, for the desired lamp, film and shutter speed. (2) Measure the distance from lamp to subject. (3) Divide the *Flash Number* by the distance in feet. This gives the correct "f" aperture to use.

For example, the table for Wabash No. 25, with Agfa Superpan Press film and a shutter speed of 1/100 second, provides a flash number of 180. This *Flash Number* is all that we have to remember as long as the same lamp, film and shutter speed is employed. Measure the distance from lamp to subject. If it is 10 feet, the *Flash Number* 180 divided by 10 feet, gives 18, and therefore "f/18" is the correct aperture to use.

The tables are based on the use of correctly designed reflectors. The amount of light placed on a subject may be materially reduced by the use of an inefficient reflector or a reflector not designed for the particular lamp. In such case, it is advisable to play safe by increasing exposure one full stop, or using the flash number taken from double the shutter speed. That is, shoot at 1/100 of a second, but use the flash number given for 1/200.

FILM A

HIGH SPEED FILMS

(Weston Tungsten Rating 64)

Agfa Superpan Press
Agfa Triple "S" Pan
Agfa Ultra Speed Panchromatic
Defender Arrow Pan
DuPont Superior 3
Eastman Ortho X
Eastman Super Panchro Press
Eastman Super XX Pan (roll, pack and 35 mm.)
Eastman Tri X Panchromatic

FILM C

FAST FILMS

(Weston Tungsten Rating 32)

Agfa Isopan
Agfa Superpan Portrait
Agfa Superpan Supreme
Agfa Super Plenachrome
Agfa Super Plenachrome Press
Agfa Supersensitive Panchromatic
Defender XF Panchromatic
Defender XF Pan Press
DuPont Superior 2
Eastman Panchro Press
Eastman Plus X Pan
Eastman Super Ortho Press
Eastman Supersensitive Panchromatic
Eastman Super XX Pan (cut film only)
Eastman Verichrome
Gevaert Panchromosa
Gevaert Ultra Panchro Press

FILM C

MODERATE SPEED FILMS

(Weston Tungsten Rating 16)

Agfa Commercial Panchromatic
Agfa Fine Grain Plenachrome
Agfa Finopan
Agfa Plenachrome
Agfa Superpan Reversible
Agfa Supersensitive Plenachrome
Defender Fine Grain Pan
Defender Pentagon
Defender Portrait H.G.S.
Defender XF Orthochromatic
Defender XF Ortho Press
DuPont Superior 1
Eastman Commercial Pan
Eastman Panatomic (Bantam)
Eastman Panatomic X
Eastman Portrait Panatomic
Eastman Super Speed Ortho Portrait AH
Gevaert Express Superchrome
Gevaert Super Ortho Press
Gevaert Ultra Panchro Press

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

NEW FLASH NUMBERS G. E. AND WESTINGHOUSE PHOTOFLASH LAMPS

THESE Flash Numbers are for average subjects, indoors in an average room.

Exposure may be decreased one stop (as from f/8 to f/11) when photographing in a small room with light walls such as a bathroom or kitchen, or when the subject is light in tone such as a fair-haired woman in a white dress.

Exposure may be increased one stop when photographing in a large room, or when the subject is dark, or the surroundings are dark, or the light is more than 10 feet from a wall, or when equipment is not accurately synchronized. If there is any doubt about compensating for the above factors, use Flash Numbers exactly as given.

G. E. No. 5 in Regular Reflector or G. E. No. 7		
	Shutter Speed	Flash Number
Film A	Open-Shut	260
	1/50	200
	1/100	180
	1/200	140
	1/300	120
	1/400	100
Film B	Open-Shut	180
	1/50	140
	1/100	120
	1/200	100
	1/300	85
	1/400	70
Film C	Open-Shut	125
	1/50	100
	1/100	85
	1/200	70
	1/300	60
	1/400	50

G. E. No. 5 in specially designed reflector or No. 21		
	Shutter Speed	Flash Number
Film A	Open-Shut	400
	1/50	340
	1/100	300
	1/200	250
	1/300	220
	1/400	180
Film B	Open-Shut	280
	1/50	235
	1/100	210
	1/200	180
	1/300	160
	1/400	125
Film C	Open-Shut	200
	1/50	170
	1/100	150
	1/200	125
	1/300	110
	1/400	90

G. E. No. 5 in Rifle-Mk Reflector (30")		
	Shutter Speed	Flash Number
Film A	Open-Shut	720
	1/50	540
	1/100	480
	1/200	400
	1/300	340
	1/400	280
Film B	Open-Shut	500
	1/50	400
	1/100	340
	1/200	280
	1/300	235
	1/400	200
Film C	Open-Shut	340
	1/50	280
	1/100	235
	1/200	200
	1/300	170
	1/400	140

G. E. No. 11A		
	Shutter Speed	Flash Number
Film A	Open-Shut	235
	1/50	220
	1/100	200
	1/200	170
	1/300	150
	1/400	125
Film B	Open-Shut	170
	1/50	160
	1/100	140
	1/200	120
	1/300	105
	1/400	90
Film C	Open-Shut	120
	1/50	110
	1/100	100
	1/200	85
	1/300	75
	1/400	60

G. E. FOCAL PLANE No. 30		
	Shutter Speed	Flash Number
Film A	1/200	125
	1/300	105
	1/400	90
	1/500	80
	1/600	75
	1/800	64
Film B	1/200	90
	1/300	75
	1/400	64
	1/500	56
	1/600	52
	1/800	44
Film C	1/200	64
	1/300	52
	1/400	44
	1/500	40
	1/600	38
	1/800	32

G. E. FOCAL PLANE No. 31		
	Shutter Speed	Flash Number
Film A	1/200	150
	1/300	125
	1/400	105
	1/500	95
	1/600	90
	1/800	75
Film B	1/200	105
	1/300	90
	1/400	75
	1/500	68
	1/600	64
	1/800	52
Film C	1/200	75
	1/300	64
	1/400	52
	1/500	46
	1/600	44
	1/800	38

G. E. No. 75		
	Shutter Speed	Flash Number
Film A	Open-Shut	720
Film B	Open-Shut	500
Film C	Open-Shut	340

G. E. No. 14A		
	Shutter Speed	Flash Number
Film A	Open-Shut	340
	1/50	280
	1/100	235
	1/200	200
	1/300	170
	1/400	140
Film B	Open-Shut	250
	1/50	200
	1/100	170
	1/200	140
	1/300	120
	1/400	100
Film C	Open-Shut	180
	1/50	140
	1/100	120
	1/200	100
	1/300	88
	1/400	76

For certain lamps, certain shutter speeds are not recommended and such shutter speeds are omitted from the tables.

The tables are arranged so that the Flash Numbers for any particular lamp can be clipped and pasted to a card or camera case for handy reference.

For a description of the various lamps, see "Which Lamp To Use," page 54.

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

MINICAM
PHOTOGRAPHY

NEW FLASH NUMBERS WABASH SUPERFLASH LAMPS

WABASH No. 25 in Regular Type Reflector or No. O		
	Shutter Speed	Flash Number
A	Open-Shut	280
	1/50	220
	1/100	180
	1/200	140
	1/300	120
	1/400	100
B	Open-Shut	200
	1/50	160
	1/100	125
	1/200	100
	1/300	80
	1/400	70
C	Open-Shut	140
	1/50	110
	1/100	90
	1/200	70
	1/300	60
	1/400	50

WABASH No. 25 in Directed-Flash Type of Reflector (60°)		
	Shutter Speed	Flash Number
A	Open-Shut	480
	1/50	380
	1/100	300
	1/200	240
	1/300	200
	1/400	180
B	Open-Shut	340
	1/50	270
	1/100	210
	1/200	160
	1/300	140
	1/400	120
C	Open-Shut	240
	1/50	200
	1/100	150
	1/200	120
	1/300	100
	1/400	90

WABASH No. 25 in "Rifle-Beam" (30°) Reflector		
	Shutter Speed	Flash Number
A	Open-Shut	800
	1/50	640
	1/100	480
	1/200	380
	1/300	320
	1/400	280
B	Open-Shut	560
	1/50	460
	1/100	340
	1/200	260
	1/300	220
	1/400	190
C	Open-Shut	400
	1/50	320
	1/100	220
	1/200	190
	1/300	160
	1/400	130

WABASH No. 2A		
	Shutter Speed	Flash Number
A	1/200	170
	1/300	150
	1/400	120
	1/500	110
	1/600	105
	1/800	85
B	1/200	120
	1/300	105
	1/400	85
	1/500	80
	1/600	75
	1/800	60
C	1/200	85
	1/300	75
	1/400	60
	1/500	55
	1/600	52
	1/800	42

WABASH No. 40		
	Shutter Speed	Flash Number
A	Open-Shut	340
	1/50	265
	1/100	210
	1/200	170
	1/300	140
	1/400	120
B	Open-Shut	235
	1/50	190
	1/100	150
	1/200	120
	1/300	100
	1/400	85
C	Open-Shut	170
	1/50	132
	1/100	105
	1/200	85
	1/300	70
	1/400	60

WABASH No. 50		
	Shutter Speed	Flash Number
A	Open-Shut	400
	1/50	320
	1/100	250
	1/200	200
	1/300	170
	1/400	140
B	Open-Shut	280
	1/50	220
	1/100	180
	1/200	140
	1/300	120
	1/400	100
C	Open-Shut	200
	1/50	160
	1/100	125
	1/200	100
	1/300	85
	1/400	70

WABASH No. 2		
	Shutter Speed	Flash Number
A	Open-Shut	480
	1/50	360
	1/100	280
	1/200	220
	1/300	190
	1/400	160
B	Open-Shut	380
	1/50	300
	1/100	235
	1/200	190
	1/300	160
	1/400	132
C	Open-Shut	220
	1/50	180
	1/100	140
	1/200	110
	1/300	95
	1/400	80

WABASH No. 3		
	Shutter Speed	Flash Number
A	Open-Shut	640
	1/50	480
	1/100	380
	1/200	300
	1/300	250
	1/400	200
B	Open-Shut	450
	1/50	340
	1/100	265
	1/200	200
	1/300	180
	1/400	140
C	Open-Shut	320
	1/50	235
	1/100	190
	1/200	140
	1/300	125
	1/400	100

For the midjet type lamps, the Mazda No. 5 and the Wabash No. 25, tables are given for use with three types of reflectors: (1) The "regular" type of reflector such as used for lamps No. 40, No. 11A, etc. (2) The "directed flash" type of

reflector, specially designed for use with the midjet lamp. (3) The "rifle beam" type of reflector used for shooting at long distances. Full information on Rifle-Beam Photography may be found in MINICAM, Aug. 1940, p. 68.

WHICH FLASH LAMP

No. 3 2A 2 50 40 0 25
WABASH SUPERFLASH LAMPS

ALL flash lamps are not alike. Of the many different types and sizes available, most photographers pick the one they like best, and stick to it. There is "one best" lamp for nearly every picture purpose. What that lamp is depends on the camera, and particularly the type shutter on that camera. It depends on the kind of pictures the photographer wants to make with photoflash light. It depends upon his flashing equipment and reflectors. It depends upon the film with which it is intended to make flash pictures. It depends upon subject matter, and upon where most of the pictures are to be made: In the studio, in the home, or out on news assignment. And it depends too on price, according to whether great quantities of flash pictures are made, or only an occasional one.

The variety of lamp types offered simply means that it has not yet been possible to manufacture a flash lamp which would do everything and satisfy everyone. Each lamp in the line has a particular appeal to a particular group of picture-takers.

The G. E. lamps have this in common:

1. They all put out enough light for good pictures, even with slow lenses, slow film and any kind of a reflector, at near distances.
2. They are all synchronized (except the big No. 75 for commercial use) . . . may be used together or interchangeably without resetting the timing of the synchronizer.
3. They all flash on battery current. All sizes draw approximately the same amount of current. A big lamp is just as easy to flash as a little one.
4. All may be used for "open" flash, although some lamps are better suited for this purpose than others.
5. They all give acceptable color pictures on type "A" Kodachrome, without a filter. (Except the blue 21B.)

There are some uses for which certain photoflash lamps are definitely *not recommended*, as follows:

1. Nos. 5, 11A, 21, 21b and 75 are not recommended for focal plane synchronization.
2. No. 16A, although useful with certain miniature focal plane shutter cameras, is not recommended for focal plane synchronization with larger sizes, such as $2\frac{1}{4} \times 3\frac{1}{4}$ " and 4×5 " negatives.

G-E MAZDA PHOTOFLASH LAMPS—CLEAR BULB

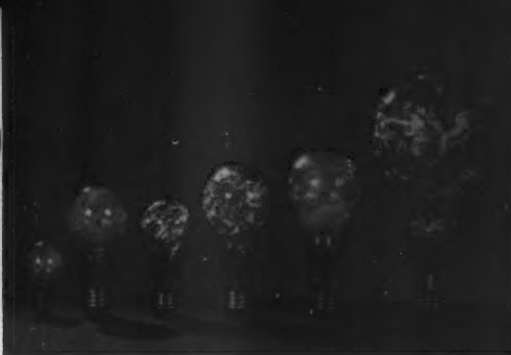
Lamp Number	Voltage Range for Operation	Type Aluminum Filler	** Effective Flash Duration	Approx. Peak Lumens	Total Light Output in Lumen Seconds	Bulb Diameter in Inches	Bulb Over-all Length in Inches	*** List Price Each
Synchro-Press No. 5	3†	Fine Wire	1/75‡	1,000,000	14,000 to 16,000	1½	12½	\$0.13
*Synchro-Press No. 7	3†	Fine Wire	1/50	1,500,000	25,000 to 30,000	1½	13½	.15
Synchro-Press No. 11A	3 to 125	Treated Foil	1/60	2,400,000	18,000 to 22,000	1½	14	.13
Synchro-Press No. 16A	3†	Fine Wire	1/35	2,500,000	40,000 to 45,000	2½	14½	.15
Synchro-Press No. 21	3 to 125	Treated Foil	1/40	4,500,000	50,000 to 60,000	2½	15	.16
*Focal Plane No. 20	3†	Wire	1/20	1,000,000	48,000 to 45,000	2½	14½	.24
Focal Plane No. 31	3†	Wire	1/15	1,500,000	70,000 to 80,000	2½	15½	.22
Photoflash No. 56		Shredded Foil		5,500,000	100,000 to 120,000	2½	15½	.23
Photoflash No. 75	3 to 125	Foil	1/25	10,000,000	180,000 to 180,000	4½	18½	.65

Synchro-Press No. 21B: Same construction as No. 21 with blue filter coating—\$0.20.

*Less widely used than formerly.
†Flash with two or more dry cells only.
*** Subject to change without notice.

** Only the peak light over ½ million lumens is normally useful on synchronized shots.
‡ All bulbs have Medium Screw Base, except the No. 5 which has a single-contact bayonet base.

LAMP TO USE?



- No. 31 is not recommended for between-the-lens shutter synchronization, because most of the light is wasted when it is used this way, although it will get a picture.
- No. 75 is not recommended for synchronized use. Its timing is slower than that of the other lamps.

The special characteristics of individual lamps which suit them best for certain purposes are as follows:

No. 5, the mighty midget, is tiny. As many as thirty may be carried in a man's coat pocket. In special reflectors, it equals

Nos. 5 16A 11A 21 31 75
MAZDA PHOTOFLASH LAMPS

the amount of light put on the subject by bigger bulbs in ordinary reflectors. In parabolic reflectors, its light can be rifled to a distance in a beam. It is easily concealed in small spaces for special effects.

No. 11A is small, gives plenty of light for close and medium-distance shots in ordinary reflectors. Best for small, box-type cameras with built-in flasher. Quick flash makes it ideal for open flash work. Designed for 110-volt operation, as well as battery operation.

MAZDA LAMP GUIDE CHART TYPES OF SUBJECTS AND CAMERAS

DISTANCE FROM SUBJECT AND TYPE OF SUBJECT	FILM SPEED See List, p. 51			SUGGESTED G.E. MAZDA PHOTOFLASH LAMP FOR							
				CAMERAS WITHOUT FLASH SYNCHRONIZERS±			CAMERAS WITH FLASH SYNCHRONIZERS BUILT IN OR ATTACHED				
	"A" Standard ↓	"B" Fast ↓	"C" High Speed ↓	Simple Box and Folding Cameras	Average Adjustable Snapshot Cameras	High Speed Snapshot and Miniature Cameras	Simple Box and Folding Cameras	Average Adjustable Snapshot Cameras	High Speed Snapshot and Miniature Cameras	Focal Plane Shutter Equipped Cameras	4x5 or Less
CLOSE UP											
Babies Children Pets Candida Portraits	⇒			No. 5 No. 11A	No. 5 No. 11A	No. 5 No. 11A	No. 5 No. 11A No. 16A	No. 5	No. 5	No. 16A No. 31	No. 31
MEDIUM											
Small Groups Parties	⇒			No. 21	No. 11A	No. 11A	No. 16A	No. 5 No. 16A	No. 5 No. 16A	No. 16A No. 31	No. 31
People, Full Length Candid Action Home Scenes Press		⇒		No. 5 No. 11A	No. 5 No. 11A	No. 5 No. 11A	No. 5 No. 11A	No. 5 No. 16A	No. 5 No. 16A	No. 16A	No. 31
LONG SHOTS or High Shutter Speed											
Rooms, Interiors Large Groups Animals		⇒		No. 21	No. 21	No. 5 No. 11A		+No. 5 No. 21	+No. 5 No. 16A	No. 16A No. 31	No. 31
Outdoors at Night High-Speed Sports			⇒	No. 21	No. 21	No. 5 No. 11A	No. 16A	+No. 5 No. 16A	+No. 5 No. 16A	No. 16A No. 31	No. 31
*DAYTIME FLASH Indoors or Outdoors	Normally requires synchronized flash—otherwise same general suggestions apply as to pictures without daylight.										
COLOR* All Subjects	Same as black and white pictures—with extra care to set right exposure. Follow film makers instructions										

± Set on Solid Support—Shutter on "Time" or "Bulb." Open shutter, flash lamp, close shutter. This is termed "open-shut" flash.
* Where daylight and artificial light must be mixed—use 21B and daylight color film with no filter.
+ In special concentrating reflector.

No. 16A is medium size. Best for all-around use in regular portable synchronizer and reflector equipment. Relatively high total light and peak light. Sustained peak light gives safety margin in synchronized use. OK with some miniature focal plane shutter synchronized cameras.

No. 21 is medium size. Quick flash, extra punch of light. Especially effective in large studio reflectors for synchronized or open flash. Designed for 110-volt, as well as battery operation.

No. 21B, strictly a special-purpose lamp. Same as No. 21, with blue filter coat added to give correct color with daylight-type color films.

No. 31, extra sustained peak light for focal plane shutter synchronization only.

No. 50, has a rated output of 100,000 to 120,000 lumen-seconds, two-thirds that of the No. 75. It is designed for taking color photographs and news pictures of scenes covering considerable area. It is a much smaller bulb than the No. 75, and may be used in smaller reflectors.

No. 75, a large lamp, for open flash only. Designed to give coverage of large areas, or high level of illumination, when used in proper large reflectors.

● MOST of the Wabash Superflash lamps have long peaks—that is, they emit

a flash of relatively long duration. This makes them well adapted for use with focal plane cameras. With synchronizers that are not perfectly adjusted, the long peak assures that some of the illumination will be captured by the synchronizer.

No. 0 is the lowest price flash bulb made and also the smallest standard-base bulb. It is ideal for close-up shots or multiple flash work. It has a peak sufficiently wide to make up for slight inaccuracies of synchronizer adjustment. Price 11c.

No. 25 is even smaller than No. 0, but is built with a bayonet base. It gives the same total of useful light, and may be used in place of the larger bulb, with the right socket or adapter. With the proper reflector it can be used for long shots, throwing concentrated illumination on the center of interest. Price 15c.

No. 40 (Press 40) is the most versatile bulb in the Wabash line. Not only an all-around press bulb, but can also be used for focal plane synchronized miniatures as well as for long shots with all but the slowest lenses. Price 16c.

Press 50 is similar to the 40 in characteristics, but is larger, giving 25% more light, making it better for color and general press work, but less desirable for close-up work. Price 18c.

WABASH SUPERFLASH LAMPS

	Press 25	No. 0	Press 40	Press 50	No. 2	No. 2A	No. 3	No. 2B Blue	No. 3B Blue
Total Light Output— Lumen Seconds	25,000	25,000	40,000	50,000	70,000	50,000	140,000	42,000*	55,000*
Peak Lumens	1,100,000	1,400,000	2,000,000	2,800,000	3,500,000	1,700,000	5,000,000	—	—
Time to Start of Flash— Milli-seconds	7	7	7	7	7	7	7	7	7
Time to Peak of Flash— Milli-seconds	23	23	23	23	25	23	26	25	25
Effective Flash Duration— Milli-seconds	40	30	37	37	47	70	55	47	55
Duration Above 50% Peak— Milli-seconds	20	16	18	16	17	50	21	17	21
Voltage Required for Flash— Volts	1.5-9	1.5-125	1.5-125	1.5-125	1.5-125	1.5-125	1.5-125	1.5-125	1.5-125
Average Current to Flash Lamps—Amps.	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Max. Instantaneous Current Battery—Amps.	2	2	2	2	2	2	2	2	2
Color Temperature— Degrees Kelvin	4,000	4,000	4,000	4,000	4,000	4,000	4,000	5,000	5,000
Overall Length— Inches	2-3/8	3-13/16	3-15/16	4-1/16	4-3/4	5-3/8	5-5/8	4-3/4	5-5/8
Bulb Shape	B12	S13	A15	A17	A19	A21	A23	A19	A23

*Light Output of No. 2B and No. 3B blue lamps for color photography are arbitrary figures for a comparative basis in computing exposures.

No. 2 is the largest standard press bulb made by Wabash, packing a punch of 70,000 lumen-seconds. Excellent for giving ample exposure to large groups or large areas with a single bulb, its wide peak eliminates many of the hazards of improper synchronization. Price 22c.

No. 2A is designed only for focal plane shutters, particularly the larger press camera sizes, which will not give fool-proof operation with other types of bulbs. Can be used satisfactorily at 1/1000 second. Price 23c.

No. 3 is rated at 140,000 lumen-seconds and is used where a terrific amount of light is needed under adverse conditions. It is designed for synchronized use, as well as open flash, but speeds faster than 1/100th second should not be used if the maximum effectiveness is wanted. Price 40c.

No. 2A is especially recommended for use with daylight Kodachrome film. Similar to the No. 2 bulb, its effective light output for Kodachrome is 42,000 lumen-seconds. Good for high-speed operation, including multiple flash.

Nos. 2B and 3B are blue bulbs for use with color film only. Because of the self-filtering principle, these lamps need no filter when used with daylight color films, either indoors or outdoors. No. 2B, price 25c; No. 3B, price 45c. Specifications are given in the table on preceding page.

Many photographers do not appreciate the value of correct reflectors with flash lamps—probably because the flash is so fast, the human eye doesn't really see what happens. A simple reflector should put at least 3 times as much light on a subject as a bare lamp used alone. But when the reflecting surface is battered, scratched and tarnished from handling, very little light may be added.

The curvature of the reflector has much to do with the distribution of the light. To get even negatives, the angle of light should theoretically equal the lens angle. This, however, is often less important than other considerations. Elliptical reflectors in general produce the most even spread of light. Parabolic reflectors are almost as good and in some ways more flexible for the average user. The intensity from a midget flash bulb may be increased 20-fold by a parabolic reflector. But since this light is concentrated in a very small area, only objects of limited size may be picked up. Larger subjects naturally require lamps of higher total output.

WABASH LAMP GUIDE CHART TYPES OF SUBJECTS AND CAMERAS

DISTANCE FROM SUBJECT AND TYPE OF SUBJECT	FILM SPEED See List, p. 51			SUGGESTED WABASH SUPERFLASH LAMP FOR							
				CAMERAS WITHOUT FLASH SYNCHRONIZERS±			CAMERAS WITH FLASH SYNCHRONIZERS BUILT IN OR ATTACHED				
	"A" Moderate ↓	"B" Fast ↓	"C" High Speed ↓	Simple Box and Folding Cameras	Average Adjustable Snapshot Cameras	High Speed Snapshot and Miniature Cameras	Simple Box and Folding Cameras	Average Adjustable Snapshot Cameras	High Speed Snapshot and Miniature Cameras	Focal Plane Shutter Equipped Cameras	
										Miniature	4x5 or Less
CLOSE UP											
Babies	⇒			No. 0	No. 0	No. 0	No. 0	No. 0	No. 0	No. 40	
Children				No. 25	No. 25	No. 25	No. 25	No. 25	No. 25	No. 2A	No. 2A
Pets											
Candid Portraits											
MEDIUM											
Small Groups	⇒			No. 50	No. 0	No. 0	No. 40	No. 25	No. 25	No. 40	No. 2A
Parties				No. 0	No. 0	No. 0	No. 0	No. 25	No. 25	No. 2A	
People, Full Length		⇒		No. 25	No. 25	No. 25	No. 25	No. 40	No. 40	No. 40	No. 2A
Candid Action											
Home Scenes											No. 2A
Press											
LONG SHOTS or High Shutter Speed	⇒				No. 50	No. 0		No. 25 + No. 50	No. 25 + No. 40	No. 50	No. 2A
Rooms, Interiors						No. 25		No. 25 + No. 50	No. 25 + No. 40	No. 40	No. 2A
Large Groups		⇒		No. 50	No. 50	No. 25		No. 50	No. 40	No. 2A	No. 2A
Animals											
Outdoors at Night			⇒	No. 50	No. 50	No. 0	No. 40	No. 25 + No. 40	No. 25 + No. 40	No. 40	No. 2A
High-Speed Sports						No. 25		No. 40	No. 40	No. 2A	No. 2A

± Set on Solid Support—Shutter on "Time" or "Bulb." Open shutter, flash is on, close shutter. This is termed "open-shut" flash.

+ In special concentrating reflector.

10 *Darkroom* DON'T'S

MIX YOUR OWN SOLUTIONS—BUT AVOID THESE ERRORS

BY VICTOR H. WASSON

SPOTS, Stains and other defects on negatives and prints often arise from careless darkroom technique. To assure consistent results, careful workers closely watch the following do's and don'ts.

1. Dirt and chemical contamination are twin demons. Keep everything clean, chemically and physically. Wipe drops of developer and hypo from the necks and sides of the storage bottles. This prevents "mysterious" chemically-formed finger prints from spoiling prints and negatives. Don't wait until tomorrow to wash trays and graduates.

2. Ordinary metal containers are better suited to cooks than to photo-chemists. Porcelain ware is O. K. for chemical compounding, and glass is better. If you don't have laboratory glassware use discarded bottles and jars. Never use bare metal, except chemical resistant stainless steel, and similar alloys.

3. Unfiltered film developer, even when freshly made, often contains foreign matter and small insoluble particles which, if deposited on the face of a film, produce blemishes. Solutions may be filtered through a cotton plug in a funnel before or after use.

4. Tap water has been purified sufficiently for human consumption. For the photographic solution, however, a few typhoid bacteria would do less harm. Distilled water in gallon lots is inexpensive and it is false economy to use anything else for mixing developers and some of the delicately-balanced toners.

5. Weights are carefully calibrated and deserve proper care. Rust and corrosion or accumulated foreign matter can change their weight and render them inaccurate.

Don't drop weights onto the balances or scales. Sudden jars can't possibly do the scales any good. Keep them clean and rust free.

6. Shaking is not recommended for readily-oxidized photo chemicals. The vigorous agitation method of dissolving chemicals traps air in the solution, speeding oxidation and rapid deterioration of the potency of the developer formula.

7. Cold water will not dissolve as large a quantity of some photographic chemicals as warm water. In some cases, water that is too cold will not even dissolve the required amounts of the chemicals. Use water at the temperature advised in the formula, usually 125° F.

8. Mix chemicals in the order given. Disregarding this sequence can have disastrous results. Alkali or Carbonate, added before developing agent crystals will oxidize the crystals. Some chemicals, mixed out of order, form insoluble compounds. Sometimes one acts upon the other so as to change the chemical balance of the formula, producing stains, fog or coarse grain. Be sure that one chemical is completely dissolved before adding the next.

9. "Beating" solutions serves to whip air into the liquid, speeding up oxidation and deterioration of the formula. A steady non-directional stirring dissolves the solids as rapidly and has no harmful results.

10. Corrosion of the metal will result from placing chemicals in the unprotected weighing pans on your scales. Corrosion pits the metal and makes it difficult to clean. Small squares of paper of identical weight placed on the scales protect the weighing pans and make pouring easier.



CRYSTALLIZED chemicals streaked or crusted on solution bottles contaminate work surfaces and the photographer's hands.



ORDINARY metal containers, such as the pots and pans in the average kitchen react with photographic chemicals, often spoiling solutions.



UNFILTERED solutions may contain foreign particles that stick to the emulsion, retarding development, causing specks and other blemishes on negatives.



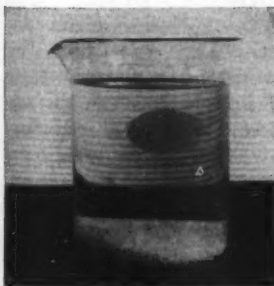
TAP WATER is seldom chemically pure enough for photographic developers. Avoid its use in any delicately-balanced formula for toning or direct color photography.



ROUGH usage of chemical balances impairs their accuracy and defeats the purpose of careful weighing. Small papers in the scale pans prevent corrosion from chemicals.



SHAKING developer solutions to dissolve chemicals imprisons excess air in the liquid, causing ordinary developers, subject to fairly rapid oxidation, to deteriorate more quickly.



COLD water may not dissolve the required amount of chemical indicated in the formula. Always use water at the temperature indicated in the formula.



CHEMICALS not mixed in the order given in the formula may refuse to go into solution, either precipitating, "sludging" or forming useless compounds.



EXCESSIVE stirring of solutions has same harmful effect as needless shaking. The added air reacts with developer chemicals to hasten deterioration.



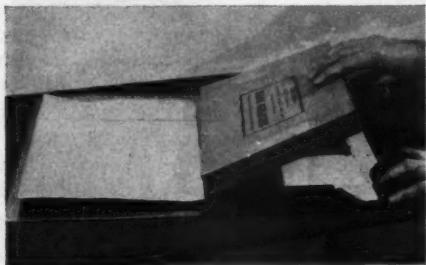
SOAK prints for five minutes in a 10% glycerine solution to prevent curling and brittleness.



POLISH ferrotype plate with beeswax dissolved in cleaning fluid to keep prints from sticking.



"WINDOW-WIPER" squeegee removes excess water and forces print into complete contact with plate.



COVER back of drying prints with blotter or box lid to retard evaporation and avoid uneven drying.

★ SUPER-FINISHING

IN the automobile industry there's a lot of talk these days about superfinish.

It's a method of finishing automobile parts to give them an extremely high degree of polish and accuracy. In photography, providing a glossy finish goes by such names as ferrotyping, squeegeeing or glazing.

Briefly, producing a high gloss on a print consists of letting it dry with the gelatin surface in contact with a highly-polished surface. Sounds simple, doesn't it? But in all photography there probably is no simple act that can give rise to such a quantity of trouble if something goes wrong.

Glossy paper is used for prints that are to be glazed. They are first fixed and washed. In summer, ordinary acid fixing bath containing potassium alum as a hardener will do for fixing. In winter, when the atmosphere is very dry, you may have to omit the hardener entirely, and even treat the prints specially to prevent curling and cracking. More about this later.

● **TWO KINDS** of glazing plates are in general use. The older and less costly kind consist of a flat sheet of black-enameled iron having one surface very smooth and even. (Hint to manufacturers: Probably sales would go up, especially among women fans, if someone would bring out enameled plates in colors.)

The other kind of plate consists of a sheet of steel or brass having one surface coated with highly-polished chromium plating. The cost is more than for enameled plates, but the durability is greater. It is often a matter of personal prejudice

GLOSSY PRINTS

whether the chrome or enameled type is used. Regardless of the kind, handle your glazing plates with care, so their surfaces will not be scratched. A rack that holds each separate from the others is advisable, and is not at all difficult to make.

It is necessary to wax only enameled plates, although it won't do any harm with chromium; and you can use an enameled plate a surprising number of times between waxing, provided you keep it clean.

● **THERE ARE MANY** waxing preparations. Ordinary light machine oil can be used. Apply sparingly, then wipe off with a cloth. Only a very thin film should be left on the polished surface.

An excellent waxing solution is made by dissolving $\frac{1}{2}$ ounce of beeswax in 8 ounces of turpentine or in non-inflammable cleaning fluid. Paraffin wax can be used instead of beeswax, with about equal success. Apply the wax sparingly, and polish to a very thin film with a soft piece of flannel or similar cloth. You cannot see the wax on a properly polished plate except when a streak is formed by rubbing your finger across it. Wax enameled plates before using them the first time, and thereafter each month or whenever you notice a tendency for prints to stick. Wash plates occasionally with soap and water.

As for chromium surfaces, simply washing them with soap and water is sufficient, but waxing may make prints come off somewhat flatter.

● **THE OPERATION** begins with the removal of the prints from the wash water. Without draining it much, place face-down on the clean surface of a ferrotype



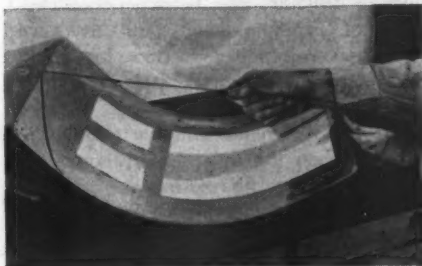
APPLY cloth backing to print and hinge while they remain on plate. Special photo cloth is best.



SHEET celluloid tacked to a wooden base serves as improvised glazing plate. No waxing needed.



RACK for holding ferrotype plates in horizontal position for more even drying of glossy prints.



CURVING ferrotype plate during drying gives prints backward curl. Wire bent at ends holds plate curved.

plate. There is a knack in bending the print, letting the center touch the plate first, then allowing the rest to drop down without entrapping any air bubbles. If wash water is not free from particles of dirt, swab the print surface with a wad of cotton before placing it on the plate. Hold the print at one edge or corner on the plate, and squeegee away all excess water. Some photographers like the roller type of rubber squeegee, while others prefer the straight "window-wiper" or "wedge" type. You can blot the backs of the prints if you want to, with photographer's blotters or newspapers.

When prints are being handled in quantity, the best way to force out the water is to pass the plates, with prints on top, through a laundry wringer having soft rubber rolls.

Drying is a critical operation. There are times when rapid drying is necessary, and often trouble such as badly wrinkled and brittle prints results. It depends on the condition of the atmosphere. In summer, when humidity is high, photographers generally have little trouble with uneven drying; but the process may be exasperatingly slow unless artificial stimulus in the form of heat or an air blast from an electric fan is applied. A fan having a heating element in front of it is ideal for summertime use. Simply lay the plates horizontally or stand them on edge in the air stream.

● **IN WINTER**, or whenever else the atmospheric humidity is very low, various kinds of difficulty may be experienced because of rapid, uneven, and excessive drying. A common ailment is known as the oyster-shell effect. This is caused by a print's drying and loosening in strips or bands that often are roughly circular in shape. When the print finally comes off the glazing plate, the surface is rippled so that it resembles the surface markings on a marine shell.

The following are some suggestions to try when you have uneven-drying troubles such as oyster-shell marking.

Do not harden the prints excessively. In winter, use a non-hardening fixing bath such as the Kodak F-24, whose formula is:

Water (125° F.)	16 oz.
Sodium Thiosulphate (hypo)	8 oz.
Sodium sulphite, dessicated	145 gr.
Sodium bisulphite	365 gr.
Cold water to make	32 oz.

Dissolve chemicals in the order listed. Use this bath at temperatures no higher than 65° F., and do not dry prints with heat.

Soaking the print in glycerin solution just before applying it to the plate is a widely-used method. Try 8 or 10 oz. of glycerin to a gallon of water, and increase the concentration if necessary until the prints come off the plates reasonably flat and can be bent rather sharply without cracking the gelatin coating. (A 10% solution is made by adding 13 ounces to a gallon of water). Soak prints 3 to 5 minutes in the glycerin bath before squeegeeing. This treatment prevents the gelatin from becoming bone-dry because glycerin is hygroscopic and therefore remains moist.

Place the ferrotype plates in a horizontal position rather than vertical, while the prints dry.

When time is not an important factor, lay a towel, several thicknesses of paper, or one or two thicknesses of clean blotter over the prints to make the process of drying slow and even. The bottom or lid of an empty gross-size paper box, set open-side-down over a print, is another way of controlling evaporation.

Some photographers adopt a "steam cabinet" arrangement. This consists of a box big enough to hold the plates, which are slipped into spaced grooves, and covered over the open side with a thin cloth curtain. The box can be set near a source of heat. Water evaporating from the prints forms a vapor cushion around the plates, and this produces uniform drying.

● **IN NEWSPAPER** plants and wherever else speed is essential, heated ferrotype plates often are used. Special tables are made with built-in electric heating elements and tops of heavy-gauge chro-

mium-surface plates. The prints are placed face-down on the warm plates, and in a few minutes are dry. To prevent excessive streaking and curling, the photographer may massage the print back with his hand or a towel.

In hot weather or other conditions when it is necessary to harden a print in addition to the hardening it receives in the fixing bath, one of the following baths can be used:

1—Water	10 oz.
Formaldehyde sol.	1 oz.
2—Formaldehyde sol.	1 oz.
Methylated spirits	1½ oz.
Water	32 oz.
3—Water	10 oz.
Potassium alum	½ oz.

The formaldehyde solution or formalin is the common 40% solution of formaldehyde gas in water. Methylated spirit is grain alcohol, denatured with wood alcohol.

After the print is washed well, place it in the hardener. Leave it in No. 1 or No. 3 solution for 3 to 15 minutes, then wash for another 15 minutes or so before squeegeeing. If No. 2 solution is used, leave the print in it for 3 minutes, and transfer immediately to the ferrotype plate.

● **THERE ARE** various stunts you will find useful in connection with glazing. For example, you can restore a badly-wrinkled or badly-cracked print to something like its former condition. Soak the print in water until it is limp. Blot until it is no longer dripping wet. Brush over the gelatin surface, a fairly thick solution of gelatin in water. This is obtainable from unflavored dessert gelatin soaked for a few hours in cold water, then heated until the gelatin is dissolved in the water.

Apply the coated print to the ferrotype plate and squeegee it into absolute contact. The gelatin acts as a filler and cement to eliminate the cracks. It might be a good idea to add a little formalin to the gelatin solution just before brushing it on, as a hardener.

(Page 96, please)

TROUBLE-SHOOTING AIDS

Prints stick to plate. Caused by unclean plate, lack of wax, improperly fixed print, or plate too warm during drying. Prints dried on enameled plates should usually be hardened; on chromium they need not be.

Rough spots on print. Caused by trapped air. Check plate to see if it is clean. Rewaxing may help. But usually the trouble is merely improper use of squeegee. Always wipe or roll in one direction only, never back and forth. Apply firm pressure while plate rests on flat surface.

Spots with surrounding area not glossy. Particles of dirt between print and plate. Flush print with stream of water or wipe with hand or cotton to remove grit. Rinse off ferrotype plate just before using.

Brown spots with dark, sharply-defined spot in center. May be caused by particles of iron in water. Also, tiny, practically invisible pinholes in chromium plating are said to cause such blemishes. Filtering water and swabbing print surface will help. Waxing chromium surface may be advisable, too; or else replace plate with new one.

Streaks and scratches across print. Caused by scratches on surface of plate. Preventive: handle and store plates carefully. Remedy: try repolishing plate with extremely fine buffing compound, if equipment is available. Best bet is a new plate.

Brittle emulsion that cracks when print is bent. Caused by excessive drying and hardening of gelatin. Remedies include using hypo without hardener, applying glycerin treatment, and drying prints in atmosphere that is not devoid of moisture.

Excessive curling. Caused by over-drying. Same treatment as for brittle emulsion. Also try curving plate with polished surface concave while print dries, to give paper a backward curl.

Areas near edges not glossy, print badly creased and wrinkled, extreme curling, etc. Caused by excessive, uneven, rapid drying. See remedies mentioned above. Treatment: Moisten back of print with wet sponge or cloth and place between weighted pages of magazine or newspaper for an hour or two. If this doesn't prove a cure, re-soak print for 10 minutes and dry again on glazing plate, under more favorable conditions.

Surface of enameled plate wrinkled and broken; print, when drying, shrinks and pulls enamel loose. Usually caused by getting plate too hot when trying to force drying. Such heating makes print gelatin more sticky and softens enamel. For fast drying with heat, better use chromium plates.

THE STORY BEHIND THE PICTURE

TWO ordinary pictures added together with a measure of hindsight, equal one good picture! If this bit of higher mathematics doesn't sound reasonable, just glance at the reproductions below and then let your eyes move to the next page where they may feast on the breathtaking beauty of "Csikos."

When Francis Aszmann thumbed through his file of negatives and looked at the scene (Fig. 1) he saw a picture containing almost every defect to be found in the weakest amateur snapshot.

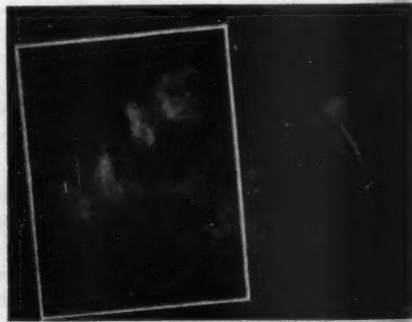
Notice that (1) the horizon line breaks

the picture in half, (2) the mass of grouped horses emphasizes the weakness of the awkwardly placed skyline, (3) the blank sky line is dull and lifeless, and (4) the foreground is meaningless.

Note, also, some details for the credit side of the ledger. The shadows of the horses are long, as the picture was taken when the sun was low. These shadows are at an angle to the horizon, due to the camera's point of view to one side. And the shutter was snapped at a propitious moment. The cowboy's whip and the horse's tail are flying. The animals' legs



THESE TWO photographs, as unspectacular as the vacation snapshots found in most amateurs' albums, were the basis for the dramatic "Csikos" on opposite page. FIG. 1



FROM THIS ordinary cloud picture Aszmann selected the part marked off by white lines for the sky in "Csikos". This added drama to the final print. FIG. 2

"CSIKOS" BY FRANCIS ASZMANN

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EVEN THE CLOUDS catch and echo the thundering excitement of wild horses charging across the

great Hungarian plain as they are rounded up by a Csiikos (Hungarian "cowboy").

FIG. 3

caught in mid-air, perfectly characterize a galloping gait.

In order to capitalize on the virtues of his picture, the photographer proceeded to see what could be done for its weaknesses, first of which was monotonous horizontality.

Changing the shape of the print meant adding either foreground or sky, because obviously, Fig 1, which shows the entire original negative, cannot be greatly improved by enlargement of a selected part.

Could more foreground be added? Perhaps, but would the result convey the excitement of wild horses charging across a plain? Hardly, since there is too much foreground already! The sky, then, is the only other possibility.

This solution took care of two problems at once. Byselecting a negative of dramatic clouds for printing above the horses, Aszmann was able to change the picture's shape and at the same time eliminate the dull, blank sky. From negatives in his file, he selected one that had the horses' stormy, spirited quality.

With the print's shape changed, and exciting subject matter provided for the new vertical picture area, the next problem was the animals. The horse at the extreme right (Fig. 1) was weak. The second horse however has the spirit of charging action. Make it the leader.

A swipe of retouching fluid on the negative, and some deft touches with a lead pencil, serve to remove the unwanted horse or enough of him. Fig. 1 is a print from the retouched negative. That is why the horse on the right appears partly white.

● TO COMBINE PARTS of two negatives in "Csikos," the lower part was printed first. The lens was stopped down so that the exposure required a full minute. Pins were stuck in the extreme edges of the printing paper at the line where the two negatives were to overlap.

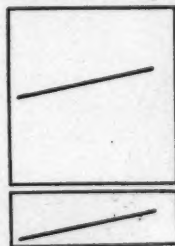
During the exposure of the lower part of the picture, the sky area above the horizon line was dodged with a piece of cardboard. The sky immediately above the

horizon receiving the most exposure, the top fourth of the paper receiving none.

A red filter was placed over the lens, and the cloud negative put in the carrier and positioned. During the exposure for this negative, the dodging continued, but the top of the paper received full exposure and the rest was shaded toward the line indicated by the pins.

This overlapping of the two exposures, with both negatives printing for part of the normal exposure where they overlap, made it possible to combine two negatives perfectly. (For more details on this method of printing-in clouds, see Oct., 1940, MINICAM, page 32).

Compare once more Fig. 1 and Fig. 3. The pattern of light and dark gray in the sky balances the bright white of the rider's cape. The horse now at the extreme right in the picture is wildness personified. Even the triangular shape of the mass of running horses with the apex at the tip of this wild horse's nose is more clearly seen. This results from eliminating that slower horse seen partly retouched in Fig. 1 at the extreme right, and partly from trimming away some of the foreground. A slanting line becomes more obvious when it is placed closer to a horizontal line as demonstrated in Fig. 4.



BOTH THESE diagonals are at the same angle from the bases of the enclosing rectangles, yet the eye finds the slant of the line in the bottom rectangle much more noticeable than the one above which is farther from a horizontal "line of reference." FIG. 4

Sooner or later, some rainy April evening, you may run through your negative file, with a mind full of doubt, but a heart full of hope.

Many a masterpiece awaits your ingenuity. Redeem those so-so shots with your imagination and perhaps some of the devices and thinking processes used to produce "Csikos." (For more about Francis Aszmann, see Nov., 1940 MINICAM, page 22).

★ FLASH TEST ★

HOW TO TEST YOUR SYNCHRONIZER FOR ALL SHUTTERS INCLUDING FOCAL PLANE.

By DR. REID DAVIS

THE accuracy of your synchronizer can easily be tested by using a lamp to take a synchronized portrait of itself. Study of the negative will show whether your equipment is in "synch." Or an enlarged print can be made and compared with Figs. 4, 5, and 6.

To test any between-the-lens (Compur) shutter: (1) Set the shutter at the highest speed for which it is marked. (2) Set the diaphragm aperture at its smallest opening. (3) Put a dense filter (deep red or orange, or a sheet of dark cellophane) over the camera lens. (4) Load the camera with the slowest available film. (5) Take a synchronized flash picture of the bulb, and compare the resultant print with the pictures below. This method was described in MINICAM, June, 1940, p. 18.

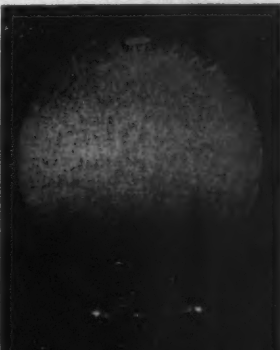
● **TO TEST A FOCAL PLANE shutter,** a single bulb image is not adequate. A focal plane shutter exposes small parts of the film in rapid sequence. The exposure slit travels across the film either horizontally (from one end of the picture to the

(Page 94, please)

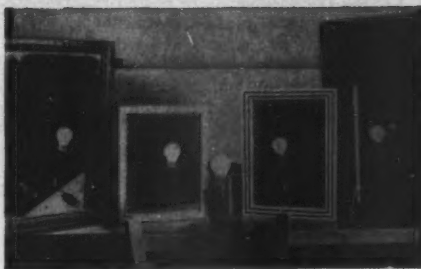
SHUTTER opened too soon. Unburned filament can be seen in the lamp. **FIG. 4**



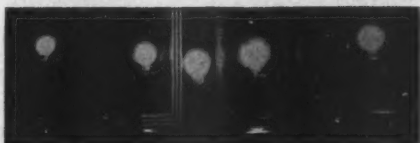
SYNCHRONIZATION perfect. Flame entirely fills lamp. No unburned material shows. **FIG. 5**



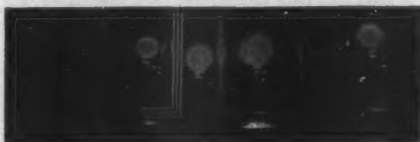
SHUTTER opened too late. Bright particles falling to bottom of lamp. **FIG. 6**



TO TEST the synchronization of a focal plane shutter, set up four mirrors, two on each side of a flash lamp. **FIG. 1**



TAKE A synchronized flash photograph at each of the shutter speeds to be used. Five images, as above, should appear on the negative. **FIG. 2**



IF ONE image is missing, as above, the synchronization is off. **FIG. 3**



● "BEING Your SNAPSHOTS AND

YOU'VE SOME NEW shots, and you feel pretty well pleased with them? Fine. Probably they are exactly as good as you think they are. But there's a chance that some detail of composition, lighting, or photographic quality may stand between them and the complete success you want for them. Send them in. Let the Old Photo Gaffer give them a swift once-over.

Naturally, he can't promise to print and criticize everything that comes in. Prints will be selected on the basis of general interest, so that the comment thereon may be valuable to as many readers as possible.

The Old Photo Gaffer is really a very friendly soul. He may fume and snort a bit, at times, but don't let that worry you. Kids and dogs like him. They say that's a good sign. . . . Now, let's see some of these new pictures.

● **"SHINE, MISTER?"** WAS made by J. L. Bastion, of Los Angeles, and it's pretty darn good, too. In the 8x10 enlargement before me there's ample evidence of good photographic quality, especially in the rendering of the



SHINE MISTER. DATA: Rolleiord, f11, 1/100 sec.

boy's skin and skin texture. And that's quite a triumph, considering the hard, uncompromising lighting. An unfortunate result of that lighting is the deep, dark shading in the boy's eyes, alongside his cheek, and under his nose. It tends to turn what is a naturally charming smile into something like a grimace. If you could have maneuvered your subject, Mr. Bastion, into an angle where a wall at your left bounced some light back onto the shadow side of your subject, those dark shadows would have been relieved.

I've taken the liberty of indicating an alternative cropping, the main purpose of which is to eliminate some of the sense of foreshortening which your low camera angle produced.

I like the simplicity of the picture; there isn't a thing in it to confuse or distract. And it's quite possible that the picture is very much what you wanted to produce. If that's the case, no comment of mine or anyone else amounts to a hoot. Who's running your camera, anyway?



MR. BINKIE. DATA: Eastman Duo-620, Finopan film, sunlight through window, f8, exposure 1/50 of a second.

● **NOW FOR THE SOULFUL** little pup, "Mr. Binkie," by H. C. Kokrda, of Lincoln, Neb. I'm sorry that we haven't a print of the whole negative to study; the print submitted is an enlargement from a part of the negative. But, even so, it's very nice. I wish that straight-line shadow across the foot could have been avoided; it spoils the roundness of that very nice doggy foot and eliminates pictorial support for the body and head. Also, I'd like to see the rest of the other paw; that would give us a little air about the pooch's head, and it could use some. But I'm not

CRITICAL"

HOW TO BETTER THEM



inclined to quibble. This is the sort of picture that draws an involuntary and appreciative "Ah!" from beholders. The black background is fine, for it keeps our attention exactly where it should be. I'll take it, and the dog, too.

● NEXT? OH YES, THE YOUNG lady in the figured dress, photographed by Lloyd Harris of Cameron, Mo. Here we have, unfortunately, an example of a beautiful subject



PORTRAIT. DATA: Eastman Bantam Special, Super-XX film, two flood lamps at sides and two overhead, f/4.5, 1/50 sec.

practically drowned in a background. If she were a blonde, the result might have been wholly successful; as it is, her dark hair doesn't show at all. That's too bad. Another thing, here, should be noted by everyone who makes or plans to make pictures of young ladies. That includes everybody. Anyway, look at those arms and fore-arms; they are spread so they create an illusion of width, beam, and general broadness that does the subject a great and grave injustice. If the arms were brought in, the slenderizing effect would be immediate and definite. And, why chop off the girl's hands? I suggest, Mr. Harris, that you try again, and this time really give your subject a chance to shine. See that she relaxes a little. Watch your background. Watch the arms and posture. And then watch the improvement.

● OUR NEXT EXHIBIT is entitled "Cheating Shows," by Vincent Giaquinto, Mt. Vernon, N. Y. I dunno, I dunno. Obviously, it's supposed to teach a severe moral lesson, but for the life of me all I can think of is, "When I want to put one over on the Thursday Evening Savage Deuces Study and Social Club,

I don't harbor aces up my sleeve; it's easier, and more fun, to stretch a pair."

But let's consider this thing as a picture. First of all, to tell the intended story, emphasis should fall, like vengeance from Heaven, on that guilty ace. Yet I betcha you can hardly make out the ace in the picture as it is reproduced here (note to the art dept.:—lay off the retouching, will you?) That's because it catches the light so as to reflect most of it, thereby drowning the design on the card itself.

Pictorially speaking, the best thing in the picture is the gent in the center. His mugging is perfect, the angle of his head is right; he gives the impression that he really has a low opinion of aces-in-sleeves. As far as realism goes, wouldn't it be more interesting to have the ace discovered when there was a little more evidence of action on the table? Chips look more impressive than folding money; they tell



CHEATING SHOWS. Argus C2, Superpan Supreme film, two flood lamps, f/4.5, 1/25 sec.

more of a story. But I can see this is no picture for me. I love my poker, and I can't keep my mind on the photographic aspects of the situation.

● WELL, THAT JUST about winds up the comment for this time. If you're willing to let me talk out in meeting about your pictures, send 'em in. They'll be treated kindly—I hope.—The Old Photo Gaffer.

Submit your pictures for criticism in this department which will try to point out how they can be improved. If a personal comment is desired, enclose a stamped, self-addressed envelope. Address "Being Critical," Minicam Photography Magazine.

LOOK AT THE
PICTURES AND CHECK
YOUR ANSWERS

K A M E R A

? ? ? ?

● **HOW DOES YOUR KNOWLEDGE** of photography stack up? Try this test. The pictures and answers will provide tips applicable to your own picture-taking. Mark each question before looking at the answers given on the next page.

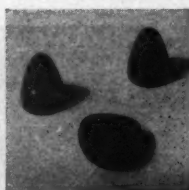


1 IN THE list below check two methods of producing photographic distortion in the **NEGATIVE**:

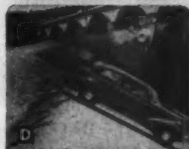
☐ Tilting easel. ☒ Exposing curved film in camera.
☒ Photographing reflection in distorting mirror.
☐ Bending the enlarging paper. ☐ Camera "Swings."



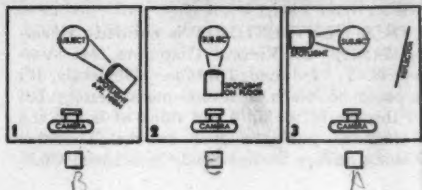
2 WHEN Sherlock woke up with a lump on his head and found these nearby he knew he had been struck by a ☐ Truck ☐ Lead pipe. ☒ Tripod ☐ Enlarging easel.



3 THESE are stills of common movie effects. Place letter corresponding to the effect in the proper square. ☒ is a wipe. ☐ is a montage. ☐ is a fade. ☒ is a lap dissolve.



4 EACH of the above pictures was made with a single spotlight as the main light source. Lighting diagrams for these pictures are at right, in a different order. Match the pictures and diagrams. In the square beneath each diagram write the letters "A," "B" or "C" to identify each diagram with one of the above pictures.



K W I Z

CONDUCTED BY
VICTOR H. WASSON

TEST YOUR
PHOTOGRAPHIC
KNOWLEDGE

?

?

?

?

ANSWERS

Don't peek! Check your questions before consulting these answers.

1. Since tilting the easel and bending the enlarging paper produce distortion in the print not in the negative, any two of the remaining three are correct.

2. These are rubber tips for a tripod. Sherlock would conclude that he had probably been hit by a tripod.

3. "A" is a fade, which will grow darker until the subject disappears. The black portion of "B" passes across the screen, wiping the scene from view. "B" is called a "wipe." In "C" one image gradually becomes lighter until it disappears while another image exposed on the same strip of film gradually darkens until it is seen clearly. "C" is called a "lap dissolve." "D" in which several images are filmed in the same motion picture frame, is one form of "montage."

4. The highlight on the left cheek shows that "A" was lighted according to diagram 3. The position of the shadows indicate that "B" was made according to diagram 1, and "C" lighted as shown in diagram 2.

5. (A) is False; (B) is True. The nail and hammer remain in contact in every exposure, indicating that this is not a stroboscopic shot but a multiple print from a single negative.

6. True. With Defender Varigam paper, the correct kind of yellow filter produces a soft print, and the specified blue filter produces a contrasty print.

7. Placing a fine wire mesh or screen before the lens breaks the light from a point source into these light bands. Try it on your night shots.

8. "A" is "out of sync" since there is no front illumination. In "B" the light is concentrated at the left, as would occur if the beam were improperly aimed. Focal plane shutters require long peak flash bulbs. A short-peak bulb is likely to complete its useful flash before the shutter slit has completely traversed the film. This results in weak, uneven illumination as in "C", often with one or both ends of the film showing underexposure.

Score: 4 correct is fair; 5 correct is good; 6 correct is excellent.



5 ONE of these statements about the above picture is true, the other false. Check them. (A) This is a high-speed stroboscopic shot. ☒ True. ☐ False. (B) The picture was made by multiple printing. ☐ True. ☒ False.

6 THE difference in contrast between the left and right halves of this print made on Defender's Varigam paper resulted from printing through a yellow filter for the left half and a blue filter for the right half. ☐ True. ☒ False.



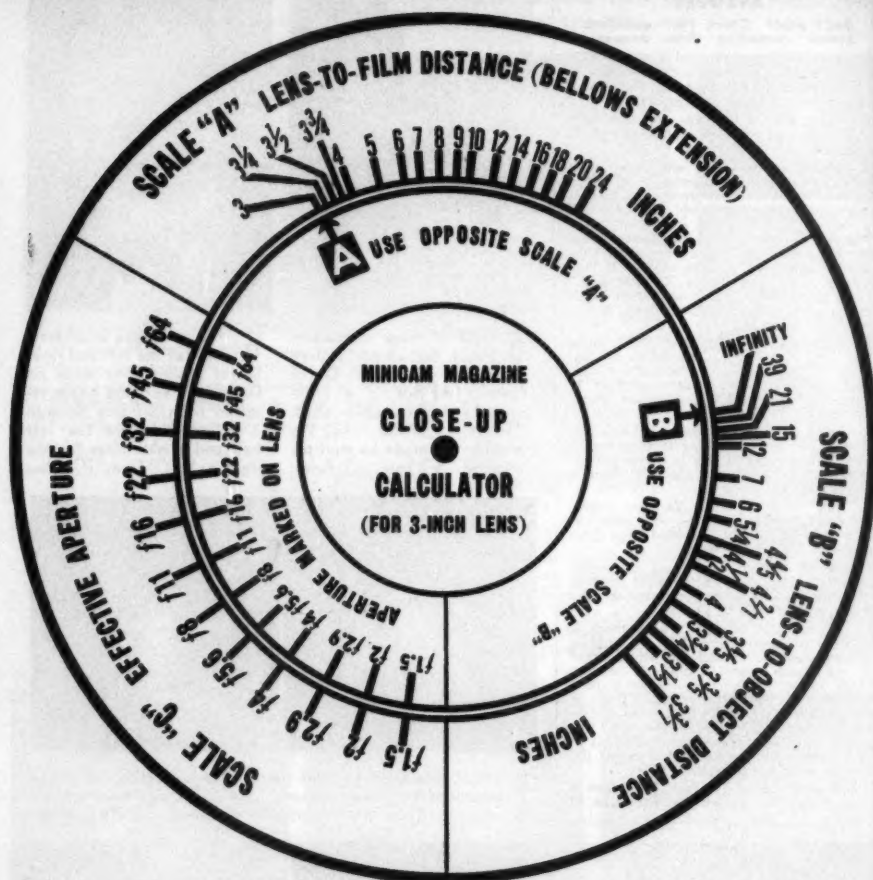
7 THESE are both straight prints. The streaks in "B" were produced by ☐ Atmospheric haze. ☐ A wire mesh before the lens. ☒ Lack of anti-halo backing. ☐ Fog filter.



8 IN EACH of these pictures the photographer had flash trouble. Which one was: Out of "sync" ☐ A, ☒ B or ☐ C? Concentrated beam aimed wrong ☐ A, ☐ B or ☒ C? Wrong flash bulb for focal plane shutter ☒ A, ☐ B or ☐ C?

MINICAM'S *Calculator* DIAL

READY FOR USE—SIMPLY CUT OUT AND PASTE ON CARDBOARD



CLOSE-UP CALCULATOR DIAL FOR USE WITH LENSES OF 3-INCH FOCAL LENGTH

THIS CALCULATOR DIAL indicates the changes in effective aperture when a 3-inch lens is used at distances closer than 40 inches. It also shows the distance at which to place the camera lens from the object to bring it into sharp focus for a given bellows extension (lens-to-film-distance).

Close-up calculators for use with other lenses will appear in subsequent issues of MINICAM.

● THE FOLLOWING examples illustrate some of the uses of the calculator:

PROBLEM: A small object is to be pho-

(Page 100, please)



WHAT SIGNAL CORPS DAREDEVIL caught this desperate action between light tanks and massed machine guns that are entrenched alongside an armored pill-box?

ALL THIS shot and shell atmosphere can be reproduced with toy tin soldiers from the dime store fighting it out in damp sand.

WARFARE MADE TO ORDER

By ALBERT T. MARTIN

IN THE PROPER SETTING, the explosions from one-inch firecrackers, or the flashes produced by a pinch of flash powder in the muzzle of a toy cannon can realistically reproduce the atmosphere of the battlefield.

A few toy soldiers from the dime store can be arranged in a setting of moist sand. Sand is more suitable than earth.

Use a low camera angle shooting from close to table level, to give the effect of the cameraman being in the thick of the fighting.

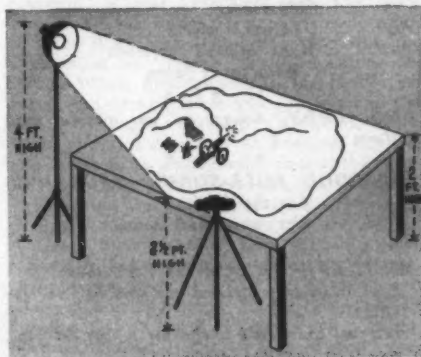
A No. 2 flood lamp in a reflector at a 45° angle above the table lights the scene and enables shooting at about $f/4.5$, $\frac{1}{25}$ second. One No. 1 flood lamp may be added as a fill-in light. Ordinary floor or reading lamps also may be used, but they will require exposures of about 1 second.

If the explosions are to be recorded, small stops and exposures as long as 30 to 45 seconds are required.

When the set-up is ready, place the firecrackers in the desired spot, open the shutter and light the firecrackers with a piece of "punk" or "wick." Any open flame will register on the film, so matches are not used to light the explosives.



RIGHT IN the "thick of the fighting" the camera records this violent table-top surprise attack.



A SINGLE LAMP simulates sunlight and provides all the light needed, except for the illumination that comes from the flashes of firecrackers.



By J. H. SAMMIS, A.R.P.S.

WANNA FIGHT?

We have developing TANKS, film CART-
RIDGES, flash GUNS, BAYONET mounts,
RANGE FINDERS, flash POWDER, printing
MASKS, BULLET cameras, film PACKS,
ARMORflex releases.

Baby wiggles,
Mamma putters,
What we need
Is faster shutters.

AIR-CONDITIONED LYRIC

There was a young model named Truda
Who usually posed in the nuda.
When asked why she chose
To pose without clothes,
She replied that it suited her mooda.

GIVE THE DEVELOPER A CHANCE

You may not know it,
But jerked-out prints show it.

GREY DAYS ARE DARKROOM DAYS

There's nothing half so pretty
As the sparkle on the snow;
But there won't be sparkle, Henry,
Without the sun, you know.

NOW THAT WINTER IS GONE

Cold lenses
In warm places
Make blurred portraits
With fuzzy faces.

NO, LADY, titlers do not rhyme with
Hitlers.

FOR GOOD, FULL-BODIED NEGATIVES

Let the dupes
Use worn-out soups.

DID IT EVER OCCUR TO YOU that:

Lantern slide projectors can also be used for
spotlights?

Interval timers are useful for taking cat-naps,
giving tests, granting interviews?

Photo-electric meters are good for testing the
relative merits of lighting equipment, screens,
reflectors?

D. A. Tumble writes in asking what we think
of using a K9 filter for dog pictures. A nice
pointer, we say!

THEY'LL DO IT EVERY TIME!

Spend 300 for a cam'ra,
Use leaky, wooden trays,
Spoil pix in used-up hypo—
And still they think it pays.

YOU CAN TRY IT but our money says it
won't work:

Pinhole cameras for candid shots.
Flash cameras in burlesque shows.
POP paper for enlarging.
Process film for stage photography.
Platinum papers for street photogs.
Red toner for snow scenes.

CREATING A MOOD

There was a young snapper from Bung (pro-
nounced "Bung")
Whose pictures never were hung,
'Till he worked with his brush,
To achieve a gray mush,
And now his praises are sung!

NURSERY RHYME NO. —?

Jack and Jill went up the hill
To photograph some landscapes;
Jack fell down,
And broke his Crown—
He used it 'cause his handshakes.

THE LEXICOGRAPHER'S LAIR:

Glycin—pronounced "gly'-sin"
Acetic—pronounced "a-see'-tick"
Amidol—pronounced "am'-i-dawl"
Silver halides—pronounced "silver hay'-lides"

HAVE YOU EVER CONSIDERED what
an endless series of compromises occur in this
thing called photography? You know, you get
a faster lens but less depth of field, frosted glass
backs but more inconvenience, smaller negatives
but larger scratches, finer grained developers
but loss of film speed (don't you believe 'm if
they say differently) or quality or both, and on
and on. And the painters, sculptors, etchers
et al tell us photography can never be a true art
because it's too mechanical. There are plenty
who will agree that maybe it IS too mechanical.

BEDTIME STORY DEPT. (Take your choice)

(a) That all great pictures are the result of
long study and planning.

(b) That all great pictures are the result of
fortuitous circumstances.

MORE MODEL TROUBLE

Slightly amorous
But unglamorous.



BEHIND THE NEWS CAMERA

By A. J. EZICKSON, Telephoto Picture Editor, Times-Wide World

MAX HAAS, who scooped New York on his bandit brothers Esposito holdup and shooting pictures (see page 14), decided to take a short vacation following his thrilling and highly remunerative picture beat. He headed for Cuba on a six-day cruise. He was in Havana just one day, but in that time got to see President Batista and obtained an exclusive story and picture layout which should more than pay for his cruise expenses. A perfect combination of business and pleasure!

● **DESPITE NAZI** bombs England's press photographers are still carrying on with traditional British calm, it was revealed in a dramatic two-way broadcast over the NBC-Blue Network, in which London and New York cameramen discussed the problems and difficulties of taking pictures under war conditions.

A New York photographer asked: "How close to bombed areas can you work?" From London came the answer: "As close as we like—and we shoot WHAT we like!"

"What do you do," queried another photographer from the NBC studios in New York, "when you are developing a picture and an air raid comes?"

"We just keep on developing," replied one of the Londoners.

Turning the tables, then, a British cameraman asked a question: "Tell me, do you see lights there every night in New York City?"

"Yes," was the answer.

"Well, we haven't for eighteen months," countered the questioner. "Not since the War began. And, say, if any of you Americans ever come to London we can use some flashlight bulbs pretty badly! We're awfully short on them here."



The three members of the New York Press Photographers Association who exchanged questions and greetings with their London com-

patriots, left to right, were: William Zerbe, F.R.P.S., of the New York Herald-Tribune; Murray Becker, of the Associated Press Photos; Joseph Costa, of the New York Daily News, and John Hartley, of the NBC News Department.

Speaking from a bombproof underground radio studio in London, left to right, were R. Saidman, of London Illustrated; Cecil A. Phillips, of Wide World Photos; Walter Bellamy, of London Daily Express; Herbert Muggeridge, of the London Daily Sketch, and W. R. Turner, of the London Daily Mail. The five London photographers kept their helmets and gas masks handy as they talked shop with their New York colleagues.



● **PERSONALITIES:** Gene Badger, former staff photographer of Syracuse, N. Y., Post-Standard, is now associated with PM, New York. . . . Louis Butler, former staff cameraman of Little Rock, Ark., Gazette, is now with the Department of Justice in Washington. . . . Owens Wood, Spartanburg, S. C., Herald reporter and photographer and lieutenant in the Reserve Officers Training Corps, has been called to active duty at Fort Benning, Ga. He also conducted a photography class at the Spartanburg County Adult Continuation School. . . . Harry Mayo, staff photographer, Toledo, O., Blade, has left for a year's military training at Camp Shelby, Miss. Tom O'Reilly, office messenger, has been promoted to the photography department. . . . Paul W. Savage, head photographer, Worcester, Mass., Telegram and Evening Gazette, and conductor of a stamp column in the Gazette, was re-elected vice-president of the Worcester Philatelic Society. . . . Paul Siegel, formerly an office boy, has been added to the Minneapolis Star Journal photographic staff.

EXHIBITS AND LECTURES

See these events in your city this month

City	Street Address	Dates Open	Name of Exhibition
Cheyenne, Wyo.	YWCA Playhouse	April 15 to 30; 9 a. m. to 5 p. m. except Sundays.	Second International Pictorial Roundup.
East Lansing, Mich.	Michigan State University.	April 18 to May 2.	7 American Photographers from The Museum of Modern Art.
Fitchburg, Mass.	The Fitchburg Art Center, Merriam Parkway.	April 6 to 30; 10 to 12 a. m. and 2 to 5 p. m. weekdays, 3 to 5 p. m. Sundays; 7 to 10 p. m. Tuesday evenings, closed Mondays.	Fourth Annual Salon of Photography.
Green Bay, Wis.	Neville Museum, Art Department.	March 30 to April 30; 9 to 12 a. m. and 2 to 5 p. m. weekdays, 2 to 5 p. m. Sundays.	Fifth Annual Fox River Valley Photographic Salon.
Lafayette, Ind.	Purdue University.	March 28 to April 11.	7 American Photographers from The Museum of Modern Art.
Madison, Wis.	University of Wisconsin.	April 7 to 21.	California Group from The Museum of Modern Art.
Newport, R. I.	The Art Association of Newport, 76 Bellevue Ave.	April 13 to 21; 9 a. m. to 6 p. m. weekdays, 2 to 5:30 p. m. Sunday.	Third International Salon of Photography.
New York City	American Museum of Natural History, Central Park, West at 77th St.	April 2 to 17; 10 a. m. to 5 p. m.	National High School Salon of Photography.
New York City	Park Central Hotel.	April 5; 8 p. m.	"Crazy Camera Ball," admission, \$1.50 at the door, \$1.25 in advance.
New York City	N. Y. Museum of Science and Industry, Radio City.	March 29 to April 20; 10 a. m. to 10 p. m.	Annual Exhibition, Press Photographer's Assn. of N. Y. C.
New York City	Parents' Magazine Photograph Gallery, 52 Vanderbilt Ave.	March 17 to April 11; 9 a. m. to 5:30 p. m.	Camera Studies of Children by Torkel Korling.
St. Louis, Mo.	City Art Museum.	March 24 to April 6; 9 a. m. to 5 p. m. daily; 9 a. m. to 9 p. m. Mondays.	First St. Louis International Salon.

CONTEST CALENDAR

Open to	Subjects	Prizes	For copy of rules, write to	Contest closes
Amateur photographers.	Two Kodachrome transparencies of a girl between 16-26. One should be a closeup head shot, and the other should be a full figure, preferably in a bathing suit.	\$1,000 in prizes for the winning photographer's pictures of "Miss Photography, 1941."	Rabson's Magazine, 111 West 52nd St., New York, N. Y.	September 11.
Amateur photographers.	No limitation on subjects, but all prints must be made from single-frame 35 mm. negatives and enlarged to 8 x 10's.	\$300, \$200, \$50, twenty-five prizes of \$10 each, and forty prizes of \$5 each.	Universal Camera Corp., 28 West 23rd St., New York, N. Y.	July 31.
All photographers.	Pictures featuring coffee or tea, but both commodities may not appear in the same photo.	Two \$50 prizes, and eight prizes of \$25 each.	"The Spice Mill" Magazine, 106 Water St., New York, N. Y.	July 15.
Anyone.	Prints toned in color.	\$15, \$10, \$5, three \$2.50 prizes, also 6 Kolor-Chrome Kits. Prizes doubled for using Gem Kolor-Chrome.	Walmet Company, 112 West 44th St., New York, N. Y.	June 30.
Anyone.	Domestic animals or birds.	\$25, \$15, \$5 and ten \$2 prizes. Ten subscriptions to "Our Dumb Animals".	Contest Editor, "Our Dumb Animals," 180 Longwood Ave., Boston, Mass.	June 30.
Amateur photographers.	No limitation on subjects, but pictures must be colored with Raygram Photo Colors.	46 photographic merchandise prizes.	Contest Editor, Raygram Corp., 425 Fourth Ave., New York, N. Y.	June 15.
Anyone.	Nature subjects. 6 classes: Mammals, birds and nests, plant life, scenery, miscellaneous and decorative.	\$15, \$10, \$5. Three awards in each class. Winners receive a year's subscription to Hobbies.	Buffalo Museum of Science, Buffalo, N. Y.	May 12.
Amateur photographers.	Any picture taken within the Philadelphia Zoo.	\$50, \$25, \$15, and three prizes of \$10 each. Other prizes of lesser value.	Mark Mooney, Jr., Staff Photog., Zoological Garden, 34th St. and Girard Ave., Philadelphia, Pa.	April 20.

"Discovery"—a Speed Graphic
Picture by Howard Vincent O'Brien
—Prize Winner, Humor Class,
in the Graflex Picture Contest.



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2 1/4 x 3 1/4 Miniature SPEED GRAPHIC
With American-made Kodak Ektar
f/4.5 lens in Supermatic shutter,
\$117.50. Down payment little as \$24

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GRAFLEX Prize-Winning CAMERAS

GADGET-HINTS AND SHORT CUTS

Packing Prints for Mailing

A shockproof packing, light enough to allow a single 8x10" print to be mailed third class for a 3-cent stamp, is made from corrugated board and a 9x12" manila envelope.

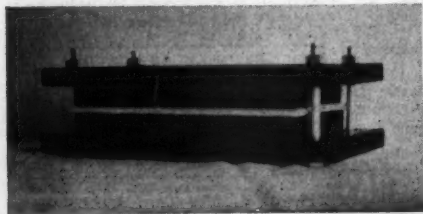
Use the 9x12" size envelope, because smaller envelopes do not have sufficient room to protect the corners of 8x10 prints. The corrugated board is sold in large sheets at stationery and artist supply stores. Unprinted sections of card board shipping boxes are also satisfactory.

Cut two pieces of corrugated board to fit snugly into the 9x12" envelope. Have the corrugations of one sheet run the length of the envelope, the corrugations of the other run the width of the envelope. Center the prints between these boards and fasten them together with rubber bands, scotch tape, or string. Label the envelope with the words: "Photographs—Do Not Bend."

An ordinary hairpin or straightened paper clip inserted diagonally into each corner of the corrugated boards (see illustration) gives added protection at the corners with only slight increase in the package's weight.—*Eugene Wyble, Worton, Maryland.*

Print Press

A handy, inexpensive press for drying and flattening all types of prints and enlargements except the glossy finish can be made with four 3/4" boards and four bolts in a few minutes'



time. If designed for enlargements, make the press 12x16" or larger.

Secure two pieces of smooth oak or other hardwood 3/4x12x16", making certain there is no trace of warping. Soft wood can be used but is more subject to warping and may split under pressure. Buy four 3/8" bolts 6 to 8" in length.

Place the two boards together one on top of the other and bore holes for the bolts about 3/4" in from each corner. When the four bolts are in place there should be a clearance space 11x14" bounded by them.

Secure two other pieces of 3/4 or 1/2" hardwood 11x14". Buy several sheets of photographic blotting paper and cut it into 11x14" pieces. Place these blotters between the two smaller boards, inserting a print-between each two sheets of blotting paper. The smaller boards are placed between the larger ones inside the bolts. The bolts may be tightened to the desired pressure with a small wrench, or wing nuts may be used. Partially dry the prints with a roller and blotter before placing them in the press, to avoid sticking. Prints may also be placed in the press in a pile between two pieces of smooth white cloth of the lintless variety.—*Eleanor F. Brown.*

Slide Files

Economical files for 2x2" slides of 35mm. transparencies are made from cigar boxes as illustrated. For convenience in stacking or storing the files, select boxes of the same size when constructing a number of the files.

Three boards 3/4" thick and about 1" wide are placed in each box to hold the cardboard dividers in place. The 1" width of the boards is half the height of the slides, which makes it easy to read the titles of



the slides without removing them from the box.

Cut the boards slightly longer than the final dimension, which is the inside length of the cigar box. Lay the boards flat and nail a small cleat across each end of the three boards. Space pencil dots 1/4" apart along one of the boards. Using a fine-toothed saw and a mitre box, saw kerfs in the three boards. Turn the center board over and saw a row of kerfs exactly opposite the row first sawed in it.

These grooved boards are then cut to exact length and set in the cigar box and fastened in place with small brads.

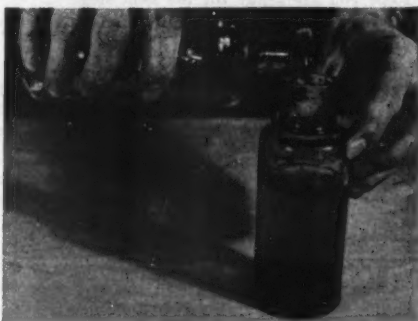
For shows or lectures one of the commercial slide files may be preferred because of its appearance, and the show is easily assembled from the slides filed in these home-made boxes.

—Frank Williams, Oklahoma City, Oklahoma.

TONING WITH OLD GOLD

Snow scenes are often toned a rich cold blue. This color is produced by a Gold Toning bath containing Gold Chloride, an expensive chemical now costing about \$1.60 a gram.

Gold articles that will never be used again can be more profitably converted into Gold Chloride for making up toning solutions than sold for old gold. It doesn't take a chemical



(Above) Testing the frame of an old pair of glasses to determine if it is Gold or merely gold plating. The bottle contains Nitric Acid. If this attacks the metal, it is not suitable for conversion into Gold Chloride. FIG. 1

(Below) Ammonium Hydroxide added to the Aqua Regia solution of Gold forms a brown precipitate (the dark deposit in the bottom of the bottle on the right). FIG. 2

engineer to prepare Gold Chloride, either. If you can mix developer you should be able to follow the simple procedure for making up this chemical from old gold.

To Aim Your Camera
Instantly

RIGHT TO THE
BULL'S-EYE
OF YOUR PICTURE



Use the ROYAL TRIPOD \$13.50
COMPLETE



Makes Perfect Composition Easy, Swift and Sure

Yes, it's just a matter of seconds to compose your picture exactly as you want it on the finished print, when your camera is mounted on the Royal Tripod with the ingenious Royal Pan and Tilt Top. Just sight the camera at your scene or subject . . . tilt it up or down and swing it with a single rapid movement . . . lock it in position with a single twist of the lever . . . and press the shutter release.

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ALBERT

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Similar Cameras.

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built; long-life felt; easy-to-load.
Better all ways . . . and less ex-
pensive, too!

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(Also, 6 1/2 x 9 cm. cut film sheaths,
12c each.)

On sale at dealers, or write

Burleigh Brooks, Inc.
126 W. 42nd St., New York City

The following chemicals are needed:

Concentrated Nitric Acid 16 oz.
Concentrated Hydrochloric Acid . . 16 oz.
Ammonium Hydroxide
(about 28%) 16 oz.

Both these acids and the Ammonium Hydroxide are caustic substances, and must be handled with extreme caution. Avoid getting any on the skin or clothing.

First test the gold articles to see if they are actually gold. Gold plating is useless for this purpose.

Test for Gold

File the gold so that a deep cut is made. Dip a glass rod in the Nitric Acid and touch it to the file cut (Fig. 1). If the material bubbles and turns green it is merely plating. If no action occurs, it is real gold or alloy of gold. Either of the latter may be used.

Making Gold Chloride

(1) In a beaker made of heat-resistant glass (Pyrex brand, etc.) prepare:

AQUA REGIA

Nitric Acid 1 part by volume
Hydrochloric Acid . . . 3 parts by volume

Make up two ounces of this solution. Place the gold in it. If it does not start bubbling immediately, heat it *cautiously*; apply only *slight heat*. As soon as the gold starts to bubble, place the glass jar in the open, where the fumes can be blown away. When the action stops you are ready for the next step.

(2) Pour off the green solution and *slowly* add to it with stirring:

Water 2 oz.

(If all the gold has not dissolved, pour on two more ounces of Aqua Regia and set the container of old gold aside in the open once more.

(3) Place the diluted green solution in a strong heat-resistant glass container and *slowly* add to it the following:

Ammonium Hydroxide 2 oz.

A brown substance should be thrown to the bottom of the container and the remainder of the liquid should turn blue. Set this container aside for 20 minutes.

(4) At the end of this time, carefully pour off the *blue liquid*, leaving the brown substance in the bottom of the container. To this brown substance, *slowly* add the following:

Hydrochloric Acid 2 oz.

(5) Allow the reaction to go on for 20 minutes. Then pour the contents of the container (liquid as well as precipitate) into a clean 5x7" tray to evaporate. The tray must be glass or a good grade of porcelain enamel, without chips or other flaws. Slight heat may be used to hasten evaporation (no higher than 100° to 110° F).

(6) The residue after all the liquid has evaporated is the Gold Chloride. It may turn red if it is heated to hasten evaporation, but if the heat is kept below 110° F no harm is done.

(7) Scrape out the dry residue and weigh it for the Gold Toning formula given below. Dissolve the Gold Chloride at once as it is deliquescent.

Now examine the first jar in which the remainder of the old gold has been lying in Aqua Regia. More gold has been dissolved and may be treated as described above.

FORMULA FOR GOLD TONING BATH

- (A) Gold Chloride
15 grains in 8 oz. of water
- (B) Thiourea
50 grains in 8 oz. of water
- (C) Citric Acid
50 grains in 8 oz. of water

To use, take one ounce each of A, B, and C solutions, add 10 oz. of water. Prints will tone in from 5 to 30 minutes.—Tracy Diers.

Testing Projector Speed

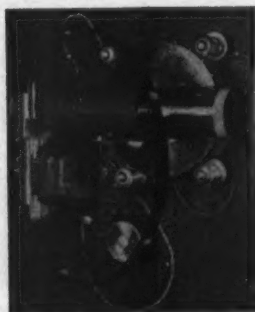
To test the running speed of 8- or 16-mm. movie projectors, use a closed loop of opaque film with evenly-spaced clear frames.

An 81-frame strip of black film is needed. The extra frame is used for splicing, producing an 80-frame loop. This applies to both 8- and 16-mm. film widths.

Scrape the emulsion from one frame, leave the next 15 frames black and scrape the emulsion from the 16th frame. Proceeding along the strip, scrape the emulsion from every 16th frame. This gives five transparent frames each separated by 15 black ones.

For a normal operating speed of 16 frames-per-second, the projector speed is adjusted so that the light flash of a transparent frame is seen on the screen once a second. This shows that 16 frames are going through the projector gate each second.

Allow the projector to run a short time before making the test, and count the flashes over a period of thirty seconds or so, timing the test with the second hand of a watch.—George Carlson, Chicago, Ill.



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36 Exposure Refill Cartridges only for above.....	.45	.25

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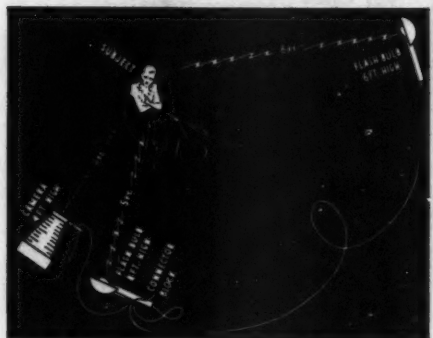
PRODUCTS

Chardelle Meteor Multiple-Flash

● **GOOD PICTURES OF BABIES, ROMPING** kittens or puppies, and young children at play, are the hardest to get, and partly for that reason, the most salable. They also make an unailing hit with Salon juries and contest judges—if they are really well done. Portrait photographers, either amateur or professional, often have the difficult problem of photographing persons whose sensitive eyes squint under the glare of ordinary photographic lights.

Multiple flash solves these and a hundred other really tough problems of lighting fugitive or touchy subjects. A practical method of working with multiple flash was described fully in September, 1940, MINICAM page 52. The gist of it is as follows:

(1) Build up a lighting arrangement with flood lamps.



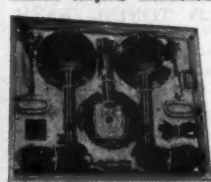
LIGHTING diagram (above) was used to produce the synchronized flash portrait below using Meteor Multiple-Flash units shown in the next column.



(2) Take a meter reading of the scene and convert this reading to the correct exposure for flash. Just how this is done is told on pages 52 and 53 of the September, 1940, issue.

(3) Replace flood lamps with flash lamps and shoot the picture.

Going MINICAM PHOTOGRAPHY one better, the Chardelle Meteor Multiple-Flash Outfit offers *synchronized* multiple flash, which makes it even easier to picture those difficult subjects mentioned above.



The Meteor Flash outfit includes everything required for firing three bulbs simultaneously.

The result is the dramatic type of portrait study shown at the lower left on this page. Or it can be a home portrait of mother and daughter (lower right below).

The entire outfit is pictured in the small illustration at the left in this column. It costs \$28.50.

Modulated lighting effects, strong sidelighting, and eye-fetiching backlighting effects are secured by placement of the reflectors. Two 20-ft. molded rubber cables, that come with the outfit, make it possible to place the lights in a great variety of positions in relation to the synchronized camera.

The Chardelle Meteor Multiple-Flash Outfit consists of the following: a Meteor-Flash Synchronizer with tip "A"; one connector; three Torch Units with batteries; three adjustable 5 1/2" Aplanatic Chrome Reflectors; two 14" cables; two 20-ft. molded rubber cables; two clamp tripods; one Syncrolite (test lamp); and one Flash Calculator with all factors including Weston film speeds.

See the outfit at your local dealer or write: The American Bolex Co., Inc., 135 East 44th St., New York, New York.



HOME PORTRAITS are easy with this three-lamp synchronized multiple-flash set-up.

\$2000.00 in Prizes for Photographer and Model

The "Miss Photography 1941" Contest sponsored by *Rabsons Magazine* is out to find the best amateur model and amateur photographer in the country. To enter, the photographer is required to submit two Kodachrome shots of the model of his choice. Any size Kodachrome will be accepted.

Make one pose a close-up of the model's head, and the other a full figure shot, preferably in a bathing suit. Only amateur photographers (those who are not now making their living from the sale of photographs)

are eligible for the prize, and the pictures must be of girls who are not and have not been professional photographic models, actresses, or singers.

A release by the photographer and model must accompany each entry giving Rabsons Magazine permission to use the pictures for publication.

Two prizes will be given, one to the winning photographer, the other to the winning model. \$1,000 in equipment and cash is the photographer's share. The model will receive an equal amount in the form of clothes, an all-expenses-paid trip to New York, etc.

Contest closes September 1, 1941. During the run of the contest, entries will be on exhibition at Rabsons.

For complete copy of rules and detailed list of prizes, write: Rabsons, 111 W. 52nd St., New York, N. Y.

University Short Course in Photography

A faculty of 21 photographers, technicians, and editors conducts the Fifth Annual News Photography Clinic and Short Course at the University of Oklahoma, Norman, Oklahoma. Jack Price, New York news cameraman and photographic authority, will direct the 1941 course, held from April 17 to 19.

Lieut. Col. A. W. Stevens, Lowry Field, Denver, Colo., the army's foremost aerial photographer, heads the teaching staff, which includes Dick Sarno, New York Daily Mirror cameraman, and Milt Mumblow, assistant managing editor and chief photographer of G. M. Folks, Detroit, Mich.

The three days will be devoted to lectures and demonstrations. All enrollees will attend the same sessions instead of being divided into three sections as in previous years. The beginner is expected to benefit from the experience of the veteran photographer.

A meeting of the Southwestern News Photographers' Association will be held during the short course. The association was formed at the 1937 short course, first of its kind in the nation.

Instruction Books for Cameras

Used camera owners can now obtain instruction booklets for their cameras. These booklets are identical to those included with new cameras.

Each part of the camera and its functions are carefully described in detail. No matter how rare the camera, you can secure an instruction booklet for 25c.

For further information write: Olden Camera & Lens Co., 1265 Broadway, New York City.



"PALS" by H. I. Lynch, Pittsburgh, Pa., was one month's winner in the Kalart Fourth Annual Speed Flash Contest.

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Texas Bluebonnet Photo Fiesta

When the Bluebonnets bloom in Texas (some time in April) Marlin, Texas, holds its Annual Bluebonnet Photo Fiesta. Because of the uncertainty of Mother Nature, the exact date when this official flower of Texas will be in full bloom cannot be foretold until four to six weeks beforehand.

Acres of bluebonnets, which grow wild near Marlin, will be in full bloom after the middle of April (if last year's dates are any indication) and the Fiesta will be held the Saturday and Sunday of the week they are in full flower.

A bulletin describing the Fiesta, and the salon, prizes and program held in connection with it, will be sent free to all interested camera fans. By the time this notice sees print, the actual date will undoubtedly have been set.

The Southwestern Association of Camera Clubs also holds its annual meeting at Fiesta time in Marlin.

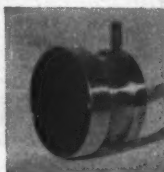
For the booklet and definite date, write: George S. Buchanan, Chamber of Commerce & Agriculture, Marlin, Texas.

H. C. E. Lens Shades and Filter Holders

The Hollywood Camera Exchange "Hollywood" Combination Lens Shade and Filter Holder is made of aluminum alloy, machined and fitted with precision and felted dull black on the inside to protect lens from stray light when shooting scenes, in which the sun is behind the subject.

Made in two styles, round (as illustrated) and square, these metal shades are supplied for all popular cameras of both American and foreign makes. Prices begin at \$2.50 for shades that fit lenses of small diameter and run up to \$20.00 for 10, 12, and 16-inch lenses having a diameter of 76 mm.

For complete list of sizes and prices, and a list of H. C. E. filters that fit these shades, write: Hollywood Camera Exchange, 1600 Cahuenga Blvd., Hollywood, Cal.



Enteco Lens Shade and Filter Kit

The Enteco Combination Lens Shade and Filter Kit No. 1 fits the following movie cameras: Bell & Howell double 8, with /3.5 lens, Revue 8 and Keystone 8 with /1.9, /2.7, or /3.5 lens; Keystone 16 with /2.7, or /3.5; and Univex with /2.7 or /3.5 lens. The No. 2 Kit fits the Bell & Howell with an /2.5 lens. Kit No. 3 fits the Argus C camera. Kit No. 4 fits the Leica with a 50 mm. Elmar /3.5 lens. Kit No. 5 fits Eastman Kodak movie cameras, Models 20 and 25.

All except Kit No. 5 are supplied with screw-in type lens shades and all kits contain two 19 mm. filters. All the kits cost \$3.95.

For complete list of Enteco products, write: Enteco Camera Accessories, 34 W. 21st St., New York, N. Y.

Princeton Sunshade and Filter Holder

The improved Princeton Combination Sunshade and Filter Holder, (75c complete) is supplied with an adapter ring of semi-flexible rubber that accommodates more than one filter size. This replaces the screw-type adapter ring formerly used.

The filter is held securely in a semi-flexible container and thus cannot be cracked or broken by compression. The new ring does not scratch the lens barrel. Four adapter rings can be used with the 29 mm. sunshade. With the 39mm. and 42mm. sunshades two adapter rings can be used. The 45mm. shade takes a 42mm. adapter ring.

For complete details, see local dealer or write: Price Industries Corp., 130 West 17th St., New York, N. Y.



Lafayette Sunshade and Filter Set

The set consists of one Lafayette Combination Sunshade Filter Holder, one Medium Yellow, one Red, one Orange, and one Medium Green filter, supplied in a Lafayette Lens Pouch.

For prices and sizes, write: Lafayette Camera Division, 100 Sixth Ave., New York City.

Kalart Speed Flash Contest Winners

Truman B. Gordon, Oil City, Pa., won the grand prize in the Annual Kalart Speed Flash Contest, with a flash shot of a puppy with a large rope around his neck. More than 2,500 entries were received from all parts of the country. Entries were limited to pictures taken with a Kalart Speed Flash.

Gordon's award was a 4x5" Speed Graphic completely equipped with Range Finder, Synchronizer and Sistogun. Nathaniel Field of Brooklyn, N. Y., captured second prize, an Omega B enlarger.

William Eckenberg, A.R.P.S., New York City, received third prize for his 1/1000 Freida Zylstra, Chicago, Ill., placed fourth with a child portrait. Mrs. Mildred Hatry, New York City, won fifth prize, a Kalart Lens-Coupled Range Finder, for her photograph of a girl and a horse.

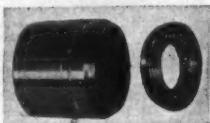
The Kalart Contest this year found contestants using flash lamps for many effects heretofore reserved for spotlights and floodlights.

For a complete list of the prize winners, write: Kalart Company, Inc., 915 Broadway, New York, N. Y.

Lens Extension Tubes

To provide extra lens extension needed for close-up work, these metal tubes (illustrated at left in picture)

are machined from duraluminum with a knurled ring for easy handling. Threads for attaching to camera and to lens are provided. Inner surface is black felted to eliminate reflections.



Shown at right in illustration is a duraluminum flange for fitting camera lenses to enlarger lens board.

For list of sizes and prices, write: Lafayette Camera Division, 100 Sixth Ave., New York, N. Y.

How to Make Your Own Photoengravings

Making your own photo engravings may sound like a difficult and expensive operation for the beginner, but with the new book, "Half-tone Processes," the process becomes so simplified and reduced in cost that anyone can now make his own halftones and engravings. The publisher also sells photographic halftone screens at one-fourth to one-tenth the cost of diamond-ruled screens.

The book also tells how to make silk screen halftones with stripping-film, photo-lithography plates, collotype and color plates. The company also offers a new gelatin silk screen stripping-film with which a complete stencil with fine type or halftone dots can be reproduced ready to print in 30 to 45 minutes.

For more information about this book and the other products, write: J. J. Tepper Corp., 30 Rockefeller Plaza, New York City.

G. E. Photoflash Lamp No. 50

Designed for taking color photographs and news pictures of scenes covering considerable area, the G-E Mazda Photoflash Lamp No. 50, is rated at 100,000 to 120,000 lumen-seconds of light output. Its peak lumens are given at 5.5 millions.

This is double the output of the G-E Mazda Synchro-Press Lamp No. 21, and two-thirds that of G-E's huge No. 75 foil-filled photoflash lamp.

Shredded foil is used in the No. 50 lamp. This is the reason so much light can be generated by a flash bulb not much larger than the No. 21. Price of the No. 50 lamp is 22c each. Made by General Electric Co., Nela Park, Cleveland, Ohio.



Phot-O-Tabs Mount Prints

Gummed corner mountings, called Phot-O-Tabs, are supplied in a handle that feeds the corner tabs as needed. Sold in permanent handle with 300 tabs for 50c; 100 refill tabs cost 10c. At photographic dealers.

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Kodak Bantam, F4.5 K. A.	15.00

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1/2-120 Super Sport Dolly, F2.9 Trioplan, Comp. \$	24.50
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2 1/2x2 1/4 Super Ikonta B., case. F2.8 Tessar, Compur Rapid	110.00
2 1/2x2 1/4 Ikonta B, F3.5 Tessar, Compur Rapid ..	65.50

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2 1/4x4 1/4 Voigtlander Bessa, F4.5 Skopar, Comp.	19.50

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9x12cm Welta D. E., F4.5 Xenar, Compur	37.50
9x12cm Camera 3. E., F6.3, Vario	11.50
9x12cm Ideal B, case. D. E. F4.5 C. Z., Comp.	64.50
10x15cm Voigtlander Berghell, Skopar, Comp.	32.50

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2 1/4x2 1/4 Voigtlander Brilliant, F4.5 Skopar, Comp.	\$17.50
2 1/4x2 1/4 Primarflex, F2.8 Biotessar, F. P.	185.00
2 1/4x2 1/4 Korelle Reflex, F3.5 Victor, F. P.	54.50
2 1/4x2 1/4 Standard Rollei-flex, F3.5 Tessar, Compur Rapid	55.00
2 1/4x2 1/4 Rolleiord II, case. F3.5 Triotar, Comp.	57.50
2 1/4x4 1/4 R. B. Graflex Ser. D., 6" F4.5 Tessar, F. P.	79.50
4x5 R. B. Graflex Ser. B., 5x7 B&L Tessar, F.P.	59.50

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Many an error in color photography that amateurs are inclined to blame on film or exposure calculation may be traced to an unnoticed fluctuation of the voltage in either the studio or enlarger current supply.

Two models of a voltage stabilizer that operates automatically are: The No. VS-150, with a capacity of 150 watts (\$25.00), and the No. VS-500, with a capacity of 500 watts (\$48.00).

Overall fluctuations in line voltage up to 45 volts are stabilized within plus or minus .25 volt of the desired output. Three plugs permit use of 105, 110, or 120 volts.

For further information write: Tricol Products Co., 18 East 42nd St., New York, N. Y.

Britelite 750-Watt Spotlight

Here is a spotlight with a 6½" heat-resisting Fresnel lens that uses a medium bi-post 750-watt lamp for maximum intensity of beam at both spot and flood positions.

The Britelite 750-watt Fresnel Lens Spotlight (\$50.00) is a larger modeling light than the Britelite No. 535, and can be used as a main light source in studio portraiture, commercial shots, etc.

The focusing system permits easy and quick adjustment of circle of light thrown by the lamp. The spotlight's cast-aluminum, one-piece construction provides strength without excess weight.

At dealers, or write for complete details to: Motion Picture Screen & Accessories Co., Inc., 351 W. 32nd St., New York, N. Y.

Bantam Super-Spot Has Improved Fresnel Lens

The 500-watt Bantam Super-Spot (\$10.00) is now furnished with a 4½-inch Fresnel lens with greatly improved light-diffusing qualities. Manufactured exclusively for the Bantam Super-Spot, the lens shows light output that exceeds similar lenses by as much as 10%, it is claimed.

Absence of color fringe, filament image, and dark lines makes diffusion screens unnecessary. The circle of light is perfectly even and white.

For further information and name of local dealer, write: Gold-E Mfg. Co., 1214 West Madison Ave., Chicago, Ill.

Amco Focusing Spotlight

A focusing spotlight costing \$3.50, the Amco Focusing Spot uses a No. 1 flood lamp and is suitable for portraits, color pictures, still life and commercial work.

The spotlight may be removed from its base for use on higher stands, and the spotlight base may also be attached to a camera, making an ideal camera stand for table top studies.

A ventilated lamphouse, cast iron base, asbestos cord, and porcelain socket are among the light's features.

For further details write: Tricol Products, Inc., 18 East 42nd St., New York, N. Y.



R. H. S. 4x5" View Camera

Featuring a 20-inch bellows draw, cut brass focusing track, and kiln-dried hardwood construction, the R. H. S. 4x5" View Camera costs \$32.50. Interchangeable reducing backs (2½x3¼" and 3¼x4¼" sizes) cost \$4.50 each.

For further information see local dealer.

Distributed in East by Raygram Corp., 425 Fourth Ave., New York, N. Y.; in Midwest by Hornstein Photo Sales, 320 West Ohio St., Chicago, Ill.

Curtis Color Analyst

The mystery of three-color separation negatives fascinates anyone who has seen a set. How are these black and white values translated into colors? The Curtis Color Analyst makes it possible to project three black and white *transparent* positives from a set of separation negatives together to produce a *color picture*.

Thus the photographer is able to discover any lack of color balance in the negatives and plan compensation for them in printing exposure, dodging, etc., before a single print is begun.

The Master Model Color Analyst (5x7" size) is priced at \$950.00; the Table Model (3 3/4 x 4 1/4" size) costs \$275.00.

For literature write: T. S. Curtis Laboratories, 2063 East Gage Ave., Huntington Park, Calif.

Photrix Universal Photometers

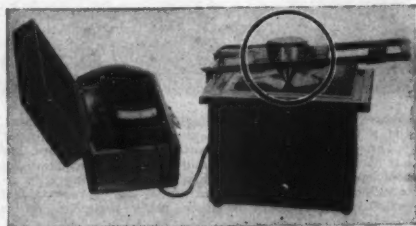
The Photrix Universal Photometers are used by photomicrographer and color photographer to calculate the relatively difficult problems of exposure for photomicrography, and to make density measurements for black-and-white and three-color separation negatives. These uses supplement the wider application of the meters to

measuring low levels of illumination where pocket exposure meters do not register, and for determining exposure time for printing and enlarging.

The illustrations show two methods of using the Photometer to take density readings. The diagram shows a method of converting a contact

printer for use as a densitometric illuminator. A condenser lens is positioned above the light source in the contact printer to concentrate a strong spot of light on the ground glass. Adjust the condenser lens until the circle of light on the ground glass is slightly larger than the light intake of the funnel on the photocell. Approximately even distribution of light over the circle is also required.

For accurate work the photocell is fastened to a hinged arm on the contact printer so that the light funnel always comes down on the same part of the circle of light on the ground glass. This makes certain that a series of readings are made with the same amount of light falling on the negative.



The above illustration shows the same Photometer used with a complete illuminator for making density measurements. This illuminator has a rheostat to regulate the light of the lamp and enable the user to set the Photometer to full-scale for the measurement of the light passing through the ground glass before a negative is placed there for reading.

In Photomicrography, the exposure readings are taken with the photocell held to the microscope eyepiece. Measurements in the focal plane may also be taken, using a special search unit, with a large rectangular photocell. Information on the applications of this versatile instrument, is given in the free 8-page booklet, "Photrix Universal Photometer," describing the uses in detail and listing prices of the various combinations. For booklet, write: Intercontinental Marketing Corp., 8 West 40th St., New York, N. Y.

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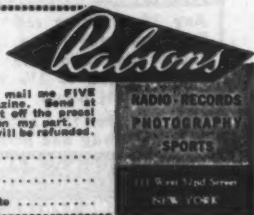
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Craig Fast Film Dryer

Print making within one hour of the last exposure—45 minutes for developing and washing the film in the normal manner, plus only fifteen minutes for drying on the Craig Film Dryer—makes possible the exposure, developing and printing of pictures all in the same evening.

The Craig Film Dryer (Price, \$19.95) has a capacity of several strips of roll film at one time, 375 square inches of drying surface. A current of warm, dry air constantly passes over face and backing of the film while drum is revolving, assuring uniform drying. The unit has a 16-gauge steel cabinet and sturdy construction throughout.

For further information see local dealer, or write: Craig Movie Supply Co., 1053 S. Olive St., Los Angeles, Calif.



Von-L "Salon" Film Developer

The developer is described as producing high-contrast negatives when used with high-speed panchromatic films. Films developed in this solution can be exposed at film speeds 8 to 10 times higher than the manufacturer's rating in daylight and 4 to 5 times higher than the rated speed in artificial light.

Absence of grain, sharpness of image outline, and great resolving power are claimed to be its characteristics. It may be used with either fast or slow panchromatic emulsions.

"Salon" Developer is sold in concentrated form, and is diluted with 15 parts of water for use. The 2-oz. size (\$2.50) makes a quart of developer that is stable and keeps indefinitely, it is claimed. The 4-oz. size costs \$4.00. A quart of the "Salon" developer processes 750 square inches of film.

For further information, or bottle of the developer, write: Mon-Blanc Photo Chemical Laboratory, Fort Wayne, Ind.

Photo-Compact Enlarger and Printer

The Photo-Compact (\$34.50, complete) is (1) an enlarger when used with regular camera attached (as in



picture at right), (2) a contact printer (center picture), (3) a thumb-light modifier, and (4) a jiffy printer table.

The enlarger head is supported on a 36" column, and has flashed opal diffusion, and adequate ventilation for cool operation. A dodger disk permits varying light intensity in desired areas and outlet for timer or foot switch is provided. Enlarger takes negatives up to 3 1/4 x 4 1/4".

Removing the head of the Photo-Compact, changes it into a contact printer taking up to 4x5" negatives. A rubber-cushioned pressure plate, metal printing mask and non-slip paper holder are provided. The Thumb-light modifier is embodied in the contact printer for producing even prints from negatives that require dodging.

The wood base of the Photo-Compact serves as a work table. The compact may be attached to door or wall, hooked over the top of a door, or set on a table. It may be assembled or dismantled in about two minutes.

The Photo-Compact Carry-All Case (\$15.00) holds the Photo-Compact, three 8x10" trays, an 8x10" adjustable easel, with room for chemicals, paper, print tongs, etc. (Shown at left in above picture).

For further information, see local dealer or write: American Bolex Co., Inc., 155 West 44th St., New York, N. Y.

Automatic Temperature Control

The Tricol Temperature Control consists of a Chromolux heating unit sealed in a ceramic core, which is resistant to attack by photographic solutions. The thermostat may be adjusted for any temperature from 40° to 120° F, making the Control highly useful in color photography, where uniform temperatures are an absolute necessity for accurate work.

Units for tank and tray are priced from \$16.00 to \$22.00, depending on height and capacity.

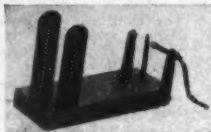
For complete information write: Tricol Products Co., 18 East 42nd St., New York, N. Y.

Hollywood "Dark-Room" Film Winder

Capable of loading 5 cartridges in 5 minutes with 35 mm. bulk film, the Hollywood "Dark-Room" Film Winder is designed to eliminate possible cartridge scratch that results when loading film directly into cartridge instead of on spool removed from cover shell.

The outfit holds 100-ft. of bulk film and is for use in the darkroom or a large changing bag. Cost of Winder is \$1.95.

For further details, write: Hollywood Service, P. O. Box 789, Hollywood, Calif.



Making Test Prints With Iso Color

The following procedure for making test prints with Iso Color is recommended:

Don't cut the sheet of stripping film in small pieces to make test prints that are developed separately. Instead use a sheet large enough for at least five tests and expose them in the following way:

If a series of exposures such as 10, 12, 15, 18, and 20 seconds is to be given, first expose the entire sheet for 10 seconds. With opaque paper or cardboard cover a fifth of the test sheet, and expose the rest for two seconds. Covering up two-fifths, expose the remainder for three seconds. Moving the card again to cover another fifth, given another three-second exposure. Cover all but the last fifth and give a two-second exposure. In this way the sequence of exposures is kept, and the edges of the different exposures are even and right next to one another making comparison easy.

Develop the entire sheet in a single bath. The correct exposure may then be selected by comparing the different strips. Exposure times for the other two prints are calculated from the instructions included with each set of separation negatives supplied by Spectrum Products, makers of Iso Color.

The above procedure is important because a working solution can be used for only one development and all working solutions must be made up for immediate use only. They will not keep and must be discarded immediately after use.

For further information write: Spectrum Products, Inc., 33 West 60th St., New York, N. Y.

Curtis Color Print Service

The Thomas S. Curtis Laboratories, makers of the Curtis Color Cameras and originators of color printing processes, offer two color print services, one to amateurs, the other for advanced amateurs and professionals. Price schedules for the 8x10" print size is as follows:

PRINT SIZE	3 PRINTS OF ONE SUBJECT	6 PRINTS OF ONE SUBJECT	12 PRINTS OF ONE SUBJECT
8x10"	Orthotone Prints from 35mm. Kodachrome \$10.00	\$16.00	\$26.00
	Permatone Professional Prints from Sheet Kodachrome Only \$15.00	\$22.50	\$33.00

Permatone reprints may be reordered from the same subject at a later date at a cost of \$3.00 per print in lots of three of the same subject.

For full schedule of prices and information on ordering, write: Thomas S. Curtis Laboratories, 2063 East Gage Ave., Huntington Park, Calif.

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See the film at your local dealers, or write: Nu-Art Films, Inc., 145 W. 45th St., New York, N. Y.

Democracy At Work, supplied in 16mm. silent and sound, and 8mm. sizes, is a one-reel film, first in the series called "Living History." Recent news events are edited to supply fundamental facts and conclusions applying to the defense of America. The Third inauguration of President Roosevelt, Lord Halifax arriving in the United States, Wendell Willkie's trip to England, and national defense activities are covered.

For further details see local dealer or write the national distributors: Films, Inc., 330 W. 42nd St., New York, N. Y.

British-Greek Victories, Castle Films' latest war release is supplied in both 16mm. and 8mm. versions. The first defeat of an Axis power is shown with actual battle scenes on the Albanian, and African fronts. Artillery bombardments, aerial attacks, naval engagements, cities crumbling under terrific fire, and prisoners surrendering are graphically filmed. The Fasces of Italy are replaced by the Union Jack on the African front. Statues of Mussolini stand battle-scarred in desert wastes.

The advance of British forces into Eritrea, down the Red Sea coast and across the border into Italian Somaliland and toward Addis Ababa, is pictured. At Castle Films dealers, at regular prices. Distributed by Castle Films, 30 Rockefeller Plaza, New York, N. Y.

Attachments for Making Special Cine Effects

The Wesco Fadette (\$5.95, complete with cable release, filter holder and case) is furnished in three models to fit all popular 16 mm. and 8 mm. movie cameras. Device produces a rectangular fade-in and fade-out at any speed.

Model "A" fits cameras with 3/4" lens collar and with view finder *above* the lens, such as Bell & Howell, Victor, Revere, Univex, etc.

Model "B" fits camera with 3/4" lens collar and view finder *below* the lens, such as Keystone, etc.

Model "C" fits all Eastman cameras, when used with Special Eastman Adapters (75c each).

The Wesco Fade-O-Mask (three sets of double masks are shown in illustration) comes complete with holder for \$2.50. Price of Wesco Fadette and Fade-O-Mask set in combination, \$7.75.

For further details on Wesco products, see local dealer or write: Western Movie Supply Co., 234 Sutter St., San Francisco, Calif.



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Uneven development, toning, intensification, and the failure of retouching colors, especially water colors, to adhere evenly to glossy and semi-glossy print surfaces have tried the patience of photographers for years. No more of that if a small amount of wetting agent is added to the solutions.

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A 10% solution of Easy Wet, when used to dilute water colors, makes them easy to apply to any print surface, and causes them to flow on evenly.

For complete list of uses or a bottle of this boon to photographers, write: George Murphy, Inc., 57 East 9th St., New York, N. Y.

BOOKLETS AND CATALOGS

Fotoshop's Spring Bulletin and Catalog Revision (40 pages, Free) features special values in new and used cameras, lenses, enlargers, etc. This is the first supplement to the 1941 Fotoshop Almanac Catalog, and includes complete descriptions and prices of latest additions to the photographic field. For copy, write: Carl Bakal, Fotoshop, 18 East 42nd St., New York, N. Y.

Wobash Exposure Bulletin, Form 722P (Free) is ready for camera fans who want the latest data on flash, flood, and color photography. A special page is devoted to color photography with the latest exposure data tables for both indoor and outdoor use with flash and flood. For copy, write: Wobash Photolamp Corp., Brooklyn, N. Y.

Filters, When and How to Use Them. (Illustrated, 15c) by Harold Hedger, senior instructor, Ground Photographic Division, Air Corps Technical School, Chanute Field, Rantoul, Ill., is an illustrated pocket-sized book full of information on the use of filters. For copy, send 15c to Lafayette Camera Division, 100 Sixth Ave., New York, N. Y.

Proposed American Standard Specifications for Determining Photographic Speeds of Roll Films, etc. Z-38.2.1 (6 pages, 25c) gives the tentative methods of exposing and developing test samples of roll films, film packs and miniature camera films to compute their speed. Standard developers for use in the tests are given. For copy send 25c to American Standards Association, 29 W. 39th St., New York, N. Y.

48 Months, published by Argus, Inc., gives the camera owner inside information on the care and precision with which the Argus line of cameras are designed, manufactured, and tested. In a series of excellent pictures, made with an Argus camera, the reader is taken on a tour of the Argus factory and shown the Argus cameras in various stages of completion, up to the final test in which loaded cameras are subjected to simulated sunlight for 45 minutes to ensure against light leaks in any of the finished cameras. For copy write: Bob Woolson, Argus, Inc., Ann Arbor, Mich.

A Shortcut to Color (15 pages, 25c) describes methods of making color separation negatives and gives a detailed procedure for producing prints from these negatives by the wash-off relief imbibition process. For copy of booklet send 25c to Krieger-O-Tone Division, Krieger Color and Chemical Co., 6531 Santa Monica Blvd., Hollywood, Calif.

Burke & James Catalog No. 141-N (92 pages, Free) features a Seiler Model IV Enlarger for $3\frac{1}{4} \times 4\frac{1}{4}$ " and smaller negatives, the Grover Flexible Camera (with a mono-rail alignment bed, a radically new design in camera-bed construction) and a complete listing of new and used lenses of all makes and for all purposes from a Goerz Anastigmat with a focal length of nearly 7 feet (\$545.00) to 8mm. movie lenses of half-inch focal length. For copy mention MINICAM when writing: Burke & James, Inc., 225 W. Madison St., Chicago, Ill.

Set of Separation Negatives for 50c

With the purchase of an Iso-Color Kit, the makers of Iso Color give a coupon entitling the buyer to a set of $2\frac{1}{4} \times 3\frac{1}{4}$ " separation negatives from a color transparency for 50c. Spectrum Products' usual charge for a set this size is \$1.50.

The offer is good until June 30, 1941. For further details or an Iso-Color Kit (\$5.95 complete) see local dealer or write: Spectrum Products, Inc., 33 W. 60th St., New York, N. Y.

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All-metal plateholders for 6.5x9 cm. Bee Bee, Maximar, Recomar, Voigtlander, and similar cameras, designed and made in the United States, cost \$1.00 each. Cut film sheaths for this size holder cost 12c each.

Distributed to camera dealers by Burleigh Brooks, Inc., 126 W. 42nd St., New York, N. Y.

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Bee Bee FILLETTE (shown at left) The most economical film filing method. Contains envelopes and indexes of identical quality and quantity for Nos. 1, 2 and 3 film sizes. Boxed in black leatherette covered cardboard container; cover opens horizontally. Available in above mentioned sizes at.... **\$1.00 ea.**

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The Recordio Junior (\$39.95, F. O. B. Charlotte, Mich.) is an inexpensive method of recording sound accompaniments for reels of home movies. It cuts home recording discs at the standard speed of 78 r.p.m.



A combination radio, phonograph, and recorder, the unit records directly from radio or through the high output microphone included with each outfit.

Built into an airplane style case, size 12 1/4 x 9 3/4", the Recordio Junior weighs about 20 lbs., and occupies no more space than the average 8mm. movie projector.

For further information, see local Wilcox-Gay dealer, or write: George Clark, Wilcox-Gay Corp., Charlotte, Mich.

Black Top on 300-watt Lamps

Seven types of T-10 300-watt G-E Mazda projector lamps are made with a black opaque end-coating said to give better lamp performance.

Made by General Electric Co., Nela Park, Cleveland, Ohio.

Mercury Foot Switch

A darkroom foot switch with double mercury contacts eliminates the possibility of sparking, burning, or eventual wearing out of metal contacts.



The Luxor Mercury Foot Switch (\$4.95) can be used on equipment using up to 250 volts AC or DC. Switch has three outlets, one for a pilot light or safelight burns at all times, the other two are for printer or enlarger. Rubber feet on base grip floor and keep switch in position.

For catalog describing switch, write: Burke & James, Inc., 223 W. Madison St., Chicago, Ill.

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Precision ground and polished meniscus lenses (59c and up) when used in front of the camera lens, shorten the focal length of the lens, and permit the camera to work much closer to the subject.

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I Had a Ringside Seat

(Continued from page 17)

"Haas admits that luck was with him from the instant he heard the shots in his office on the sixth floor of 353 Fifth Avenue, at 34th Street."

During 1940 I have had the good luck of being able to take pictures which attracted nation-wide attention. As is generally known, Sonja Henie in her eight years of skating never took a fall except once last year during her annual Ice Carnival at the Garden when she fell on the ice while I was watching from one of the cages, camera in hand. The result was a very exclusive shot of this, the only spill which she has taken since she turned professional.

On one other occasion I was also very fortunate in obtaining pictures of Richard Jaeckel, New York furrier who had just fallen or jumped from the twelfth floor of the building across the street from where I live. He landed on the marquee of this building practically without any injury. I happened to be in the street with my camera at the time and obtained a series of pictures which was used by the Daily News, Life Magazine and syndicated nationally by Acme News Pictures.

This does not mean that every scoop sells. For instance, last year on the closing



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day of the World's Fair, I was present with my camera when World's Fair policemen beat up and arrested some people who were trying to run off with some chairs and similar souvenirs. I thought I had a very excellent set of pictures but the papers weren't interested at all.

The lesson, however, is simply this: always keep your camera loaded and be prepared for action if you're interested in getting exclusive news pictures.

Flash Test

(Continued from page 67)

other as in the Leica and Perflex) or the slit travels vertically across the picture area (from top to bottom as in the Graflex shutter and the Contax).

The easiest way to produce a suitable subject for testing a focal plane shutter is to use two mirrors on each side of the flash bulb as in Fig. 1. Including the bulb itself, this produces five bulb images on the film. If one of these images is absent in the negative, the focal plane shutter is not correctly synchronized to expose the entire picture area.

Connect an electric extension cord to the synchronizer so that the socket may be clamped about six feet from the camera. Arrange the two mirrors on each side of the bulb, so that the images of the bulbs are in a straight line.

The camera may be set at any distance. About 8 feet is a convenient distance. The space between the lamp images must be great enough to cover the entire camera field. Put a small incandescent bulb in the socket and move the camera until the five images can be seen through the viewfinder, with the outside images appearing close to the margins of the frame. If the images are all in the center of the picture area, the test naturally will not be conclusive for the edges of the frame.

If the shutter has a horizontal slit moving from top to bottom of the picture (Graflex, Contax, etc.) turn the camera on its side so that the shutter will travel horizontally for the test.

(Continued from page 41)

With meters not having a removable hood, use an exposure factor of about 30. That is, multiply the meter reading by 30. If the meter recommends a half-second exposure, the illuminated building would be photographed at thirty times this or 15 seconds.

A small pocket flashlight is not exactly a camera accessory, and yet it is very valuable in night work for looking at the lens and shutter settings, and to check the camera field of view.

Illuminated buildings are so new in many cases that the owners have never seen photographs of their establishments at night. The rates they will pay vary greatly, perhaps anywhere from \$2 to \$10 for an 8 x 10" or 11 x 14" print. And additional copies are purchased in many cases.



"He can't afford models."

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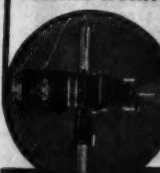
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SHELTON, CONN.

Superfinishing Glossy Prints

(Continued from page 63)

A glossy print that has been retouched with an etching knife can be re-glazed to eliminate the knife marks.

The boundary lines in paste-ups, made by pasting a feather-edge cut-out print on a background print, can be made practically invisible by ferrotyping. The addition of gelatin may help here, too.

● Cloth backing may be applied to a print while on a ferrotype plate. Arrange the print and a strip of paper adjacent to one end or side to form a hinge, and squeegee them into position. Leave the paper fairly moist. Lay a sheet of prepared backing cloth over the print, and rub or roll it into contact. When dry, print and cloth will come loose from the plate, and can then be trimmed. The hinge strip, usually about 1 in. wide for an 8x10-in. print, enables the print to be bound with others into a booklet. This is an excellent way to make an album.

Various substitutes for conventional glazing plates are used. Glass has been employed, but it involves extra work and is so uncertain of results that it is seldom



"He ain't interested, says he's all out of film."

recommended. However, if you *must* try it, here's how: First have the glass absolutely clean, and then wax it thoroughly as described for enameled plates. Soak the print in a solution of 1 part oxgall to 100 parts water for 3 to 5 minutes. Drain and transfer to the glass. Squeegee as usual. Another way is to polish the glass with dry French chalk, dust off the excess, and apply the print as it comes from the wash water. If your glass-glazed prints refuse to come loose from the glass, don't say you weren't warned!

Sheet celluloid makes an excellent glazing medium provided its surface is highly polished and free from scratches. No waxing is required. Keep it away from fire. You may even use the polished hood of your automobile as an emergency ferrotype plate! Similarly, plates can be made by applying auto enamel, baking enamel, or other glossy, hard finishes to ordinary sheet iron.

Torture on the Screen

(Continued from page 50)

and started for home. Some ran. Some jumped furniture.

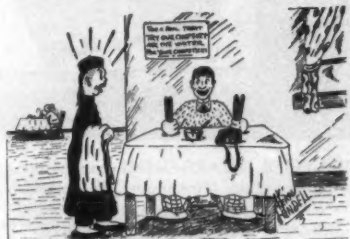
Gertrude said I needn't bother; Bertram was going her way. Somebody stopped, just then, to speak to me.

"Claude, my boy, let me know ahead of time next time you give a show, will you? Forewarned is fore-armed."

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Simple Cine Effects

(Continued from page 47)

"twin" or "split-screen" shot. It is most used for dual roles, or scenes in which a man and his double appear. The method of making it is exactly the same as the dream shot except that the camera must be on a *rigid tripod* and *must not move* between the two halves of the take, while rewinding the film. The actors must not permit any part of their body to cross the dividing line between halves, or it will disappear in the final film. This can, however, make some amusing shots. Thus an actor walking across a matted scene will disappear when he reaches the dividing line, though if the mattes are properly made, no line will show. Similarly, if a thin tree or pole is right on the dividing line, and one-half of the scene is matted, an actor may walk past the tree, then poke his head around it into the side of the scene being photographed. The film is rewound and the other half shot with no one in it. The effect will show a person apparently hiding behind a tree only



52-DIAMETER ENLARGEMENT from 35 mm. negative processed in Micrograin "85" originated by J. V. Mansfield, Ph. D. The 4½x6-foot prints are on tour among leading photographic stores and camera clubs. DATA: High-speed film, Leica Model 3, f9, 2-second exposure. For exhibition dates, write: Mansfield Photo Research Laboratories, 701 S. LaSalle Street, Chicago, Ill.

a few inches in diameter, and looking out from behind it.

Fig. 9 shows the single frame release button on one make of camera. A number of cameras, both 16mm. and 8mm. are so equipped. If yours is not, it is still possible to expose single frames for stop motion work, by a quick pressure of the release button as described above.

Fig. 10 illustrates a simple set-up for a stop motion shot. A rubber mouse from Woolworths was made to sniff gingerly around the baited trap simply by moving it *about 1/8" at a time*, and photographing a single frame of each movement. The lighting is so set as to suppress detail which would show the mouse to be rubber, without legs. The scene as a still is obviously faked, but movement in the film adds considerably to the authenticity of the shot, and makes it look like a real mouse in action.

Many of these tricks do not require re-winding, but if you have mastered the re-winding of film as explained in both last month's article and this article, none of these special effects should present any difficulty. More complicated effects and tricks can easily be worked out by using the effects described here as a foundation and combining them in various ways.



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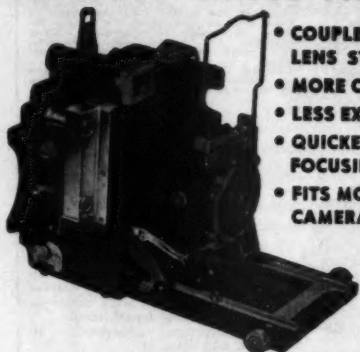
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Minicam's Calculator Dial

(Continued from page 72)

tographed with the 3-inch lens 12 inches from the object. What bellows extension (lens-to-film-distance) is required?

Answer: On Scale "B" of the dial set the arrow opposite the lens-to-object distance, 12 inches. On Scale "A", opposite the arrow, read 4 inches, the bellows extension necessary to focus the object sharply.

PROBLEM: What is the effective aperture of a 3-inch lens used at a bellows extension of 4 inches when the diaphragm is set at f22 marked on the lens?

Answer: Keep the dial set for the first answer (12 inches on Scale "B" and 4 inches on Scale "A"). On Scale "C" the effective aperture is shown on the outer dial. Opposite f22 on the inner dial, for this bellows extension the effective aperture is f32. This applies to the amount of **LIGHT ACTUALLY ACTING ON THE FILM** and not to the depth of field. At close distances the depth of field **DECREASES** greatly.

PROBLEM: An exposure meter reading on the same closeup subject calls for 10 seconds at f32. What diaphragm aperture marked on the lens is the equivalent of f32? If this marked aperture is used a 10-second exposure is sufficient.

Answer: Keep the dial set as for the first two problems. On the outer scale of Scale "C" locate f32. Opposite this value on the inner scale read f22. This is the aperture at which the lens must be set to permit the indicated exposure of 10 seconds at f32.

For a more detailed description of the uses of this Calculator, see MINICAM PHOTOGRAPHY, March 1941, pages 54 and 55.

NEXT MONTH IN MINICAM: "PAINTING WITH LIGHT"

Photograph interiors and other subjects with a single lamp used as a painter uses a brush.

CAMERA CLUB

— NEWS AND IDEAS —

● **THE CHICAGO AREA CAMERA Clubs** Association has organized its Program Service under four sub-classifications, of interest to similar groups of clubs throughout the country. (1) The Judging Service provides twelve competent judges (recognized salon exhibitors) for club salons and contests. (2) The Lecture Service, provided by the Association School, makes available ten fee lectures on specialized subjects. (3) The Speakers' Bureau provides 25 qualified speakers on a variety of subjects. (4) In a separate classification are six photographic authorities who are members of the Photographic Society of America but are not members of the Chicago Association.

The Association bulletin lists speakers and subjects in each issue so that member clubs are able to "window shop" for program material.

● **THE HOTEL TAFT**, New York, N. Y., offers New York Clubs, which lack meeting facilities, the rent-free use of the Hotel's East Village Room, for use from 8 p. m. to 12 midnight, *Monday evenings only*.

Any camera club desiring to book this meeting room should write: Albert A. Hauser, Hotel Taft, New York, N. Y., giving the name of club, how long it has been organized, number of members, average age of members, and aim of the club.

This is really good news for New York Clubs.

● **THE MILLENIUM IS HERE!** At a meeting of the Monroe Camera Club, at the Monroe Calculating Machine Co., Orange, N. J., the members viewed a series of full-color slides projected to give a three-dimensional effect. Polaroid viewing glasses and projection filters were used. These slides were the work of Clinton Chase, who specializes in nature subjects.

That's the kind of program material every Program Chairman prays for!

● **EVENING MEETINGS ARE** convenient for most camera club members, but how about the men who are working on "Night Shifts"? In a center of defense production like Detroit that's no small problem. Luckily, Lawrence G. Western, 2249 Fairview Ave., Detroit, Mich., found an answer.

The Esquire Camera Club of Detroit holds meetings in Room 313 at the "Downtown" Y. M. C. A., 2020 Witherall Ave., at Grand Circus Park. Meeting time—note this—is 1:00 P. M. on the first Monday of each month! There's an idea.

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Greenwich Photographic Society, organized at Greenwich, Conn., has headquarters in the Greenwich Library.

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By Warden La Roe

YOU can make an enlarging meter in an hour at a cost of less than a dollar. The materials needed are:

A wooden box, such as a cigarette box, with a separate, mortised lid to make the box light-tight.

A porcelain lamp socket and a 6-watt night lamp, purchasable at any electrical supply store.

An electric cord of desired length with plug. Aluminum paint.

Paint the inside of the box with aluminum paint. Drill a small hole in one end of the box large enough to insert the electric cord. Attach this to the lamp socket and wrap with enough friction tape to tightly fill the hole to prevent the escape of any light. Attach the lamp socket to the box with small screws, drawing the excess cord out through the hole.

Drill a hole $\frac{1}{8}$ " in diameter through the side of the box. This hole should be drilled beginning $\frac{1}{2}$ " from the bottom of the box on the outside, upward on a 45-degree angle to emerge inside the box. (See Fig. 1.) If the surface of the hole is fuzzy, clear it slightly with a hot wire.

Screw in the 6-watt bulb and you are ready to test your meter. Put a negative of average density and contrast in the enlarger. Focus it on your easel with the lens wide open, then stop down the lens to its smallest aperture.

Put the lid on your meter, plug in the cord, and set the meter on the easel. A small spot of light from the 45 degree angle hole will fall on the surface of the easel. Move the meter until this spot of light rests on one of the middle tones of the projected negative image.

Open the enlarger lens diaphragm until the increased light exactly balances the spot of light projected from the meter—that is, until the spot of light just disappears.

If the spot does not disappear when the enlarger diaphragm is wide open, the meter beam is too strong. To reduce its intensity, thumbtack a strip of white paper over the inside of the

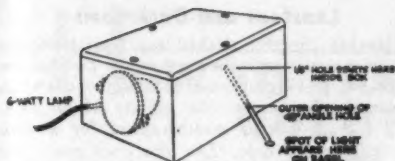


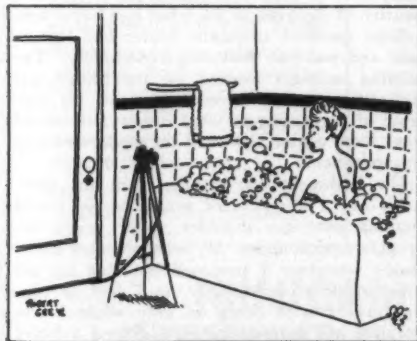
Diagram of the enlarging meter. Dotted lines indicate interior constructions. Fig. 1



For a professional-looking job, paint the finished meter with a dull black paint. Fig. 2

opening of the 45 degree hole. Reduce the intensity of the light source until the light spot will disappear from your easel when the diaphragm opening of the enlarger lens is midway between its largest and smallest apertures. Then fasten the lid on with screws.

After focusing the negative and adjusting the enlarger diaphragm until the spot of light—cast on one of the middle tones—has just disappeared, make a test strip to determine the proper printing time. As long as the same paper of the same contrast grade is used, enlarging time for all negatives and for any degree of enlargement will remain the same! Only the aperture of the lens diaphragm will change, since it will be necessary to regulate this for each negative until the spot of light from the meter disappears. Make a test strip for each type of paper you use, label it with the name of the paper and the proper enlarging time, and file for ready reference.



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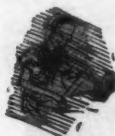
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Lensfans and Darkrooms

Having literally sloshed my way from the basement, through the bathroom, and to the attic, I feel competent to comment on an amazing phenomena—the affinity of an amateur photographer for a dark hole. Let him once prove the chemical miracle of producing a photographic image and he asks nothing more. Somehow, through feverish enthusiasm, he'll find a place to make his pictures.



I once knew a half-pint lensman whose darkroom was a second-hand trunk. He would rush home with his box camera, stuff himself into the trunk, and yell for his mother to shut him in. His equipment consisted of a camera, three trays, a bottle of D-72 and some milky hypo. Considering everything, he contributed some passingly fair prints to the photographic art, not the least effective of which was an embarrassingly candid shot of me with my arm around my first girl friend. I suppose this picture really was his greatest success. He passed prints out among my roughneck companions on the football team.

When I first felt the yearning to be alone in a dark place with the cockroaches, the only corner I could find was in the musty basement of the apartment house where I lived. I swept and mopped my stygian cubicle, moved in a table, three trays, and prepared to see what God had wrought. Staring vacantly into the blackness, I rocked the developer tray with one hand and held a luminous dial watch with the other. This went on for some minutes, and the darkness and silence began to press in upon me. I doubted that fifteen minutes ever would pass.

Suddenly there was a terrifying rushing sound and a hellish sheet of flame made the place as light as day. I lost interest in art and concentrated on getting out the door. Completely unnerved, I peered back from the security of daylight to see what had happened. A huge gas-fired automatic heater had lighted itself and was now flickering contentedly. The building manager assured me the heater was perfectly safe, but I couldn't stand the suspense of wondering at what instant hell would break loose again. I moved my equipment into my apartment.

The bathroom was smaller than the basement, but I knew there would be no flames jumping over my shoulder. Now began the struggle against light. My wife objected strenuously whenever I proposed blocking up the large window permanently, so I had to content myself with doing so only while I was working. As an experiment, I draped a heavy bathrobe over the window, then stood back to view the effect. The light came through it as

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if it were cheesecloth. Before the room was dark enough I had my entire wardrobe and a blanket pinned together over the window, all of which had a habit of sliding wearily to the floor just as I immersed my prize shots in the developer. This was hard on my disposition, to say nothing of the film. I went hunting for a darkroom.

In a downtown hotel I found a strange, off-brand sort of room—it was seldom rented because it had but one window, was hot in summer and cold in winter. Its one overwhelming advantage was that I could use it for only five dollars a month. I went to a paint store and bought a quart of what the clerk assured me was absolutely opaque enamel for the window and transom opening. I spread this on thick, but it merely transformed the clean sunlight into a dirty-brownish glow. I gave it up as a bad job and cut pieces of fibre board to fit the window and transom.

I now became a man of mystery; people who had known me as a quiet sort of person were shocked to see me entering the hotel lobby with arms full of bottles and jugs. The hotel porters were convinced that I was some kind of a gargantuan drunkard seeking seclusion two or three nights a week to drink himself into unconsciousness. This was because of the quantities of cracked ice I ordered to cool my developer and fixing bath—three pails at a time.

The maids who cleaned the room were divided. One faction, never before having seen anything like my enlarger, believed I was a crackpot inventor. The other faction regarded me as a nut, hot in pursuit of the secret of perpetual motion. Guests in adjoining rooms thought a variety of things, none very flattering. The doors between were thin and not very tight.

Once, about 2 a. m., I was washing prints in a device of my own invention, which makes a noise like Niagara Falls. The man in the next room pounded on the door.

"Hey!" he yelled. "Hey! You in there!"

"Yes?" I answered meekly.

"What're you doing?" asked the voice. "All that water. It must be the hotel laundry—or a swimming pool. What is it?"

Although the guests on either side wondered about me, I never was in the dark as to their activities. For the first time in my life I became a radio fan. One customer devoted all his waking hours to the Bennys, the McCarthys and the Crosbys. It made time pass quickly while rocking my tray of D-76. I learned a great deal there in the dark of my off-brand hotel room—clandestine love affairs, Saturday night poker games, drinking parties, and even secret political caucuses.

I grew a little tired of the responsibility of keeping all these secrets, and also found that

the steam heat made my enlarging paper curl up like watch springs. So I moved out.

Now I find the necessary darkness in a room of my own construction. I blocked out the light from a screened-in back porch with two dollars' worth of roofing paper, some laths and a dime's worth of nails. I gave a carpenter three dollars to build a trapdoor over a stairway and nailed weather stripping around the door.

I believe I'm settled now. My darkroom is dark, and I don't bother anyone—except my wife, who lives in mortal terror of dropping through the trapdoor.

ODDITIES BEFORE THE CAMERA



THE PATTERN picture reproduced in the Oddities Department, on page 43, resembles wood grain and other things, but it is water flowing over the spillway of this dam. The picture oddity is a small portion of the above scene. Note that even at this distance the wood-grain effect is still noticeable, although not so obvious as in the enlargement.

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The American Museum of Photography, 338 South 15th Street, Philadelphia, Pa., recently opened under the auspices of the Pennsylvania Arts and Sciences Society. It is said to be the first museum in the United States to be devoted solely to photography.

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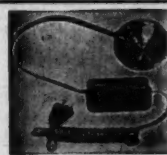
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sun photographed in 1854.

"Fifty Years of Portraiture" is the title of
an exhibition of carbon prints, platinum prints,
gum prints, tissue paper prints, and three-color
portraits of Elias Goldensky.

Most of the great American photographers
such as Langenheim, Anthony, Brady, Root,
Gutekunst, Sarony, Bogardus, Briggs, Bell,
Jackson, Savage, Rau, and Neff are represented
in the Museum's collections.

Photography Speeds Air Defense

When the Lockheed Aircraft Corporation
spent \$50,000 for photographic equipment,
they went in for cameras, enlargers, and de-
veloping tanks on a tremendous scale. The
developing tank, for instance, is
12 1/2 ft. long, 5
ft. deep, and 3"
wide, and holds
115 gallons of
developer. The
hypo tank is the
same length and
depth, but 24"
wide and holds
900 gallons of
fixing bath. Nearly a ton of
hypo is required
to make up one
batch of fix.



This set-up Lockheed's huge copying
handles the 4x camera. FIG. 1

12-ft. sensitized
metal sheets on which are enlarged the photo-
graphic template patterns used in factory and
shop fabrication. Equally impressive in size are
the camera and enlarger. (Figs. 1 and 2).

The procedure is to photograph engineers'
drawings, in a special fixed-focus camera using
14x17" glass plates. The camera is set to
give 1/4 reduction from the original drawings.

These plates are then enlarged on sensitized
metal to the exact dimensions of the parts to
be fabricated. The metal prints are cut out
to become the templates or patterns that go
to the shop. Just as with ordinary negatives,
as many prints as are needed can be printed.

The camera is located in the "loft" where
the engineers make full-scale drawings of the
plane parts on the metal-surfaced 12x96-ft.
loft floor. Mounted on 6" rubber wheels the
giant camera points straight down at this
"drawing board" floor, the lens being about
8 1/2 ft. from the drawing that is photographed.
A sheet metal box (shown in Fig. 1) keeps out
all outside light. Eight 48" fluorescent tubes
are used to light up the drawing. A standard
Cooke Process lens, f/12.5, having a 19" focal
length is used.

The enlarging camera is an adaption from the photo-engraving industry, and is 35 ft. long. Two 16x 25-ft. darkrooms take the place of a bellows. One wall serves as a lensboard for the 70" /16 Process lens used for the enlargements. In the second 16x25-ft. room beyond this "lensboard"



Special enlarging camera, shown prior to installation. FIG. 2

wall, the sensitized metal sheets are set up to receive the projected image. The 70" lens (Fig. 3) is 6 inches in diameter and weighs 18 pounds.

The metal sheets used for these enlargements are coated with a light-sensitive emulsion made by either the Eastman Kodak Company or the Hammer Dry Plate Company.

No film clips and film hangers are used for processing the 4x12-ft. metal sheets after exposure. Instead overhead electric cranes transport the sheets through the photographic solutions which are kept in water-jacketed tanks that remain at a constant temperature through the action of a refrigeration system.

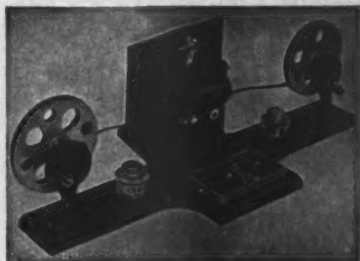
This gigantic photographic set-up is estimated to save the manufacturer \$20,000 per model, as well as speeding up the production of templates, hitherto a relatively slow operation.



Process enlarging lens of 70" focal length, compared with with standard /4.5 anastigmat in shutter. FIG. 3



"It's easier than writing a laundry list, isn't it?"



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Add Rain to Your Movies

Rainy-day movies have interesting atmosphere—but general scenes don't show the rain convincingly. To really put the spring rains into your films, insert closeups, taken at the same time or later, and genuine or faked. Faking is easy; rain is just water, and you have plenty of that on tap.

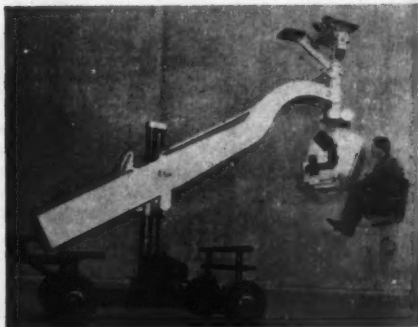
For the "fill-in" shots, pick a rain-spout or leaking gutter; a rain-barrel or bucket into which drops are falling; puddles on a wet street; a brooklet or stream at a shallow, rocky spot where the water is roiled; rain dribbling down a window-pane; a street dimly seen through a droplet-beaded window; water dripping from eaves, and other such scenes.

A sprinkler can and a garden hose are fine accessories; you can wait until the rain stops, then pick your spot and put a shower where you want it—in dryness and comfort. If the sun comes out, seek a cross-lighting on your faked shower—it makes the drops sparkle as they fall.

In case you have a lens extension tube for closeups, by all means include a few extreme closeups of individual droplets, or thumbnail scenes such as water streaming down a tendril of vine, or caught in a small blossom. Do these indoors—on a table—where you can concentrate plenty of light just as you want it, for convenient exposure and good pictorial effect. And how they do dress up a "rainy-weather" movie!—*Jeanne Scherr.*

New Cine Camera Boom

In addition to his other work as Camera Chief at Metro-Goldwyn-Mayer, John Arnold,



INTERMEDIATE-sized camera boom swings into action, with the camera on underslung mounting.

A. S. C., has taken time out to design a prize-winning camera boom.

This intermediate-sized camera boom of the

crane-arm type has two camera, mountings. The underlung mounting permits laying the camera on the stage floor for low angle shots. When the camera is mounted on the camera platform extending above the 9-ft. boom arm, it may be lifted 16 feet into the air.

The boom arm is raised and lowered by a helical hoist driven by a General Electric 3/4 horsepower DC motor controlled through a G-E starter and controller. The control circuit limit switches stop the upward and downward travel at predetermined points.

The boom arm rotates freely through a full horizontal circle. In addition the camera head, by an independent action, can be swung through a full circle for panorama shots. The tilthead likewise operates through a 360° circle, vertically.



DESIGNER JOHN ARNOLD, A.S.C., who is M-G-M's Camera Chief, at versatile boom's controls.

The entire boom weighs only 3100 pounds, over two tons lighter than conventional units of comparable size.



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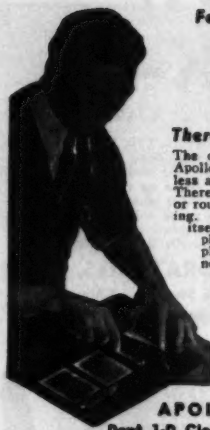
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SALONS

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June 2	Fourth Annual Exhibit, Memphis Pictorial Club.	H. C. Wilson, Memphis Pictorial Club, 6 North Main St., Memphis, Tenn.	4	\$1.00
May 17	Eighth Annual Photographic Salon of Marshall Field & Company.	Marshall Field & Company, First Floor, Camera Section, 121 North State St., Chicago, Ill.	4	.50
May 15	Sioux Falls Second Annual Salon of Photography by The Pictorial Photographers of The North Central States.	A. S. Anderson, Y. M. C. A., Sioux Falls, S. D.	4	\$1.00
May 12	Third Nature Salon, Hobbies Magazine.	Hobbies, Buffalo Museum of Science, Buffalo, New York.	4	\$1.00
May 12	Third Annual Northern New York Photographic Salon.	John A. Millard, Salon Chairman, 417 Franklin St., Watertown, New York.	4	\$1.00
May 5	Tacoma Camera Club 1941 Photographic Salon.	Earl D. Mann, Secretary, Tacoma Camera Club, 1021 Pacific Ave., Tacoma, Wash.	4	\$1.00
May 1	The First Annual Ozark Salon of Photography.	Eugene Kibbe, Salon Committee Chairman, 443 Cherry St., Springfield, Mo.	4	\$1.00
May 1	Second Annual International Vancouver Salon.	P. Bentley, 119 West Pender St., Vancouver, B. C., Canada.	4	\$1.00
May 1	Third Annual Salon, Rockefeller Center Camera Club.	Leonard W. Timbs, Room 3124, RCA Building, New York City.	4	\$1.00
April 28	1941 Anthracite Photographic Salon.	Scranton Camera Club, Everhart Museum, Scranton, Pa.	4	\$1.00
April 26	Third Annual Salon of Photography, Racine Camera Club.	Roy Sorensen, c/o Chas. A. Wustum Museum of Fine Arts, 2542 Northwestern Ave., Racine, Wis.	4	\$1.00
April 26	Paducah International Salon of Photography.	Salon Committee, Paducah International Salon, c/o E. E. Curtis, Paducah, Ky.	4	\$1.00
April 25	All-American Salon of Pictorial Photography.	Sid Pratt, Salon Director, 214 North Avenue 44, Los Angeles, Calif.	4	\$1.00
April 24	Seventh Blossom Festival Salon of Photography.	W. H. Mitchell, Salon Sec., 614 Broad St., St. Joseph, Mich.	4	\$1.00
April 19	New Jersey National Salon of Photography, Orange Camera Club.	Salon Committee, Orange Camera Club, 1 South Clinton St., East Orange, N. J.	4	\$1.00

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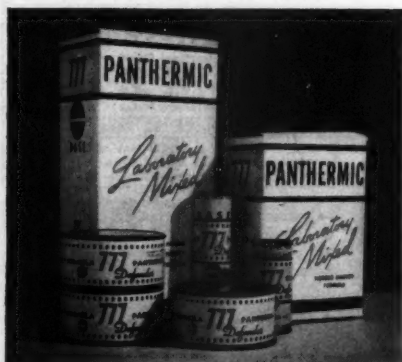
pepper grinder of the table variety, the kind that are adjustable, the size of the flakes can be changed to suit the photographer's purpose.—*Duane Featherstonhaugh.*



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